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## Table of Contents

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ORIGINAL ARTICLES—	PAGE.	ABSTRACTS FROM CURRENT MEDICAL LITERATURE—	PAGE.
"Psychiatry and the Medical Curriculum," by W. S. DAWSON, M.D. . . . .	91	Medicine . . . . .	110
"Ammonium Persulphate in 'Yeast Foods' as a Cause of Allergic Dermatitis in Bakers," by F. S. HANSMAN, M.B., Ch.M., M.R.C.P. . . . .	94	SPECIAL ARTICLES ON DIAGNOSIS—	
"The Effect of the Gamma Rays of Radium and of X Rays on Blair Bell's Colloidal Lead," by W. J. PENFOLD, M.B., Ch.M., D.P.H., B.Hyg., M.R.C.S., L.R.C.P., and JAMES SUTHERLAND . . . . .	98	Extrauterine Pregnancy . . . . .	112
"Macrogenitosomia and Other Disturbances of Growth and Development," by W. SPALDING LAURIE, M.D., B.S. . . . .	100	BRITISH MEDICAL ASSOCIATION NEWS—	
REPORTS OF CASES—		Scientific . . . . .	115
"A Pneumothorax Apparatus," by BRUCE HUNT, M.D., M.R.C.P. . . . .	103	Nominations and Elections . . . . .	116
"Spinal Hypertension," by A. C. F. HALFORD, M.D., F.R.A.C.S. . . . .	103	OBITUARY—	
"Delayed Peritonitis," by M. P. SUSMAN, M.B., Ch.M., F.R.C.S. . . . .	104	Frederick Steele Scott . . . . .	117
REVIEWS—		POST GRADUATE WORK—	
Gynaecological Operations . . . . .	105	Practical Demonstrations in Melbourne . . . . .	117
Pathology . . . . .	105	CORRESPONDENCE—	
Gynaecological Diagnosis . . . . .	106	Professional Advertisement . . . . .	118
Splenic Disorders . . . . .	106	Foreign Bodies in the Bronchi . . . . .	118
LEADING ARTICLES—		Hospital Practice . . . . .	119
The Status Lymphaticus . . . . .	107	The Practice of Physical Therapy . . . . .	119
CURRENT COMMENT—		DIARY FOR THE MONTH . . . . .	120
The Relation of Focal Infection to Disease . . . . .	108	MEDICAL APPOINTMENTS . . . . .	120
Tuberculosis of the Stomach . . . . .	109	MEDICAL APPOINTMENTS VACANT, ETC. . . . .	120
PSYCHIATRY AND THE MEDICAL CURRICULUM.		MEDICAL APPOINTMENTS: IMPORTANT NOTICE . . . . .	120
By W. S. DAWSON, M.D., Professor of Psychiatry in the University of Sydney.		EDITORIAL NOTICES . . . . .	120

### PSYCHIATRY AND THE MEDICAL CURRICULUM.

By W. S. DAWSON, M.D.,

Professor of Psychiatry in the University of Sydney.

THE London *Times* of February 2 of this year contained an extract from the issue of a hundred years ago.

Wednesday, February 2, 1831.

The first meeting of the College of Physicians was held last night. It was attended by a vast number of the learned and celebrated of all professions. . . . We should think that there were present quite as many barristers as members of the medical profession. Sir Henry Halford (the President) read to his learned audience a paper, of which the subject was "the effect of diseases upon the mental faculties."

From a brief report in *The Lancet* of February 12, 1831, it appears that the lecturer discussed what

attitude a physician should adopt towards a patient of whose recovery no hopes were to be entertained. Doubtless Halford's experience was reflected in many observations upon the interrelation between body and mind which would have been of interest to us today, but I have not been able to obtain any further details. However, in looking through *The Lancet* for 1831 I came across some sidelights on the teaching of psychiatry from the reports of clinical lectures delivered at Saint Thomas's Hospital by Dr. John Elliotson, in which mental disorders received a good deal of attention. On February 14 Elliotson lectured on "Hysteria, Illustrating the Propensity to Irritation" and referred to a patient with hysterical delirium who died.

The first instance I ever saw of hysteria proving fatal. In general hysteria is a very innocent disease.

On March 14 of the same year Elliotson included in his lecture "An Extraordinary Case of Mono-

<sup>1</sup> Read at a meeting of the New South Wales Branch of the British Medical Association on April 30, 1931.

mania-Insanity-Phrenology." The subject was a woman who had developed:

A propensity to injure some part of herself and she had no ease or comfort—these were her own expressions—until she gave way to it. . . . She does not desire to cut herself, to dash her head against the wall or to poison herself, but to injure herself simply by muscular efforts, unaided by external objects, so that she will hold her breath for the purpose of suffocating herself; she will twist her head to one side to strain and break all the muscles and tendons on the other side of the neck . . . She was quite sensible this was a morbid state and lamented it exceedingly.

Other symptoms noted were depression, insomnia and a very foul breath. Elliotson discussed the nature of morbid impulses, the diagnosis of insanity and the localization of the organ of destructiveness in the brain. Treatment included cupping behind the ears up to twelve ounces, five grains of calomel twice daily, a low diet and frequent application of leeches to the region above and behind the ears, below which Spurzheim localized the organs of combativeness and destructiveness. The unfortunate woman was later seized with a pain in the abdomen and died in a few minutes. It is recorded that the examination of the brain revealed no abnormality and that the autopsy was interrupted by the arrival of the friends who claimed the cadaver before the abdomen could be opened. Elliotson (1791-1868) was physician to Saint Thomas's Hospital, was appointed Professor of the Principles and Practice of Physic in the University of London in 1831 and delivered these lectures, which appear to have been largely attended. Although Elliotson was a general physician, he was interested in the teachings of Gall and Spurzheim and had already become an ardent exponent of the new science of phrenology. Elliotson's unorthodox teaching and his practice of hypnotism brought him into disrepute with his colleagues and he was later (1838) forced to resign his hospital appointments. A paper which he wrote in 1843, on "Numerous Cases of Surgical Operations Without Pain in the Mesmeric State" cost him the remainder of his professional reputation.

Elliotson's predecessor in the chair was one, John Conolly, who was appointed in 1828. Conolly had already acquired a deep interest in mental disorders and during his occupancy of the chair unsuccessfully applied to the Council of University College for permission to give his students clinical instruction at one of the metropolitan asylums. Conolly was appointed Superintendent at Hanwell in 1834 and instituted his famous reforms. After some years of reconstruction Conolly began to give clinical instruction to medical students (1842), one of whom subsequently recorded his impressions in the following terms.<sup>(1)</sup>

I had the advantage of attending the clinical lectures given by Dr. Conolly at the Hanwell Asylum, and I retain the most vivid and pleasant remembrance of them. Two students were nominated from each of the metropolitan hospitals to form this clinical class. We assembled at Hanwell about noon once a week. We then made a visit through the wards in company with Dr. Conolly and the medical officers of the asylum, receiving some words of instruction upon the cases in general, our attention being

especially directed to particular patients. This occupied, probably, near two hours; I believe sometimes more. We thus, from week to week, saw almost every phase of mental disorder, from acute mania to general paralysis and dementia. We also saw the application of the system of non-restraint, then on its trial, directed by that kind and calm philosophic temper so very conspicuous in Dr. Conolly (Dr. Gull in "Memoir of John Conolly," by Sir James Clark, 1869).

The course was repeated several times and in 1846 Conolly published his "Clinical Lectures." His teaching was essentially practical and commonsense, he employed a simple nomenclature and classification and emphasized the importance of observation and careful examination.

The present century has seen profound changes in the general orientation of psychiatry, whose spiritual home was rather amongst philosophers and psychologists than amongst physicians. Unfortunately psychiatry still suffers from the long divorce from the general body of medical science and now apologetically and with some trepidation seeks for readmittance to the fold. Kraepelin, indeed, approached the problem of mental disorder according to the medical practice of his day and delineated a number of clinical entities based on aetiology, symptomatology, pathology (where possible), course and outcome. His system has the merit of precision and satisfies the soul of the dogmatist, but it is no longer in keeping with more recent developments in general medicine. Whether we are dealing with a rise in temperature or a feeling of depression, we are investigating, not an hypothetical disease, but the reaction of the human organism to noxious stimuli, in the one case perhaps microbic, in the other often psychological or situational. The static disease concept of Kraepelin is yielding to an approach which is more interpretative and individualistic, in which the whole personality is studied as an integration of functional levels of increasing complexity, one or more of which may call for special investigation and treatment. This change in viewpoint has been clearly expressed by Professor Adolf Meyer, Director of the Phipps Psychiatric Clinic at the Johns Hopkins Hospital:<sup>(2)</sup>

The most fundamental departure from current tradition is the emphasis not on the question whether the patient presents one or other of a set of diseases, but rather on the question how many facts and conditions enter into the state of the patient, what reaction complexes are recognizable as relative entities, and what psychopathologic, cerebral, general, somatic, endocrine, toxic and infectious components. Let us get away from the dominant notion of classification of each patient as having just one exclusive disease.

I speak with diffidence on a subject in which there is so little fixed doctrine and so much personal bias. There is a wide demand for the assistance of the psychiatrist towards the attainment of human health and betterment, especially in the United States, but the supply seems in danger of being inadequate. The popularizing of mental hygiene, the establishment of special clinics and the demand for a higher standard of care and treatment in mental hospitals are casting new responsibilities on all who are concerned with medical education. The

reorganization of the medical curriculum in the University of Sydney is a golden opportunity for setting our house in order and for insuring that our specialty gets into line with the rest of medicine.

I venture to suggest that psychiatry must take its place as a superstructure the stability of which will depend on the soundness of its foundation on the biological sciences, and that time will show less of psychology and more of biology. Not that mind and conduct can or ever will be described or explained in terms of anatomy and physiology, but that similar principles will be seen to operate at each level of organization. The great need for the present is to harmonize what psychologists and physiologists have observed from their special viewpoints. Something of the sort has indeed been attempted by Sir Henry Head in his study of aphasia. Until that consummation takes place, the student will continue to complain that his introduction to psychology and psychiatry involves the entry into a land whose language and customs are bewilderingly unfamiliar.

What the general practitioner needs to know is not the material of most text books on psychiatry, the authors of many of which have had mainly institutional and specialist experience. Psychoses, after all, play a small part in general practice. On the other hand, the practitioner learns sooner or later that many of his patients come to him with symptoms which are based on domestic or occupational maladjustments—neuroses which do not easily lend themselves to classification according to any precise text book scheme. The minor forms of mental deficiency which render the individual less adequate in his social adaptations, anomalies of temperament, the shortcomings of parental example and control in childhood are just a few factors which may determine a disorder of conduct. And when the practitioner has honestly faced the failure of a careful physical examination to explain some or all of the symptoms presented by a patient, he may well look to the so-called psychological, that is, the emotional, domestic or occupational, aspects of the case.

In this university pregraduate teaching in psychiatry includes the following courses:

*Third Year.* A short course in medical psychology is given towards the end of the third year and is intended to be supplementary to the study of the anatomy and physiology of the nervous system which is undertaken at that time. It is endeavoured throughout to stress the clinical application of the topics discussed rather than to offer an exposition of academic psychology. Frequent reference is made to the symptomatology of mental disorders. The subjects dealt with include: Place of psychology in the natural sciences; conception of functional levels; methods of psychology; dreams as type of less than full consciousness and comparison with symptoms of mental disorders; memory and the association of ideas, with the clinical application of researches on conditioned reflexes; physiology of emotion and the study of emotion and temperament with their bearing on clinical work; instinct, with special reference to the psychology of different epochs in the life of the individual; intelligence and the application of psychological tests.

*Fourth Year.* Elementary clinical work in the psychiatric out-patient department. Recognition of signs and symptoms of mental disorder and instruction in case-taking. This should occupy a term, but the attendance of students has hitherto been interrupted by instruction in other departments. This aspect of teaching in psychiatry obviously is worthy of the closest attention. The student should at least have a fair grounding in general medicine and under the new curriculum attendance in the psychiatric out-patient department will be postponed until the fifth year.

*Fifth Year.* Systematic lectures (twenty) and demonstrations (ten) in psychiatry. I hold most of the latter at Broughton Hall with a view to familiarizing the student with the types of mental reaction more frequently encountered in general practice.

*Sixth Year.* Under the new curriculum the greater part of the sixth year is to be devoted to clinical work, and clinical psychiatry will not be overlooked.

I would suggest that the need in most medical curricula in the universities of the Empire is not for more lectures and demonstrations in psychiatry, but for more clinical work, especially work in small groups under the out-patient physician. This should include not only case-taking, but also the writing of commentaries on a number of cases. In the University of Sydney the presentation of a commentary on a selected case is one of the conditions for the Norton Manning Prize in Psychiatry.

Ideally, the student should have ample opportunities for observing mental disorders in a general hospital, which should make provision for the treatment, in a special block, of patients with such conditions as systemic diseases (cardio-vascular, pulmonary, renal), with mental symptoms calling for special methods of treatment (neurosyphilis, toxic, delirious and confusional states), as well as so-called functional conditions, namely, neuroses and psychoses. It would be necessary to select cases in which active treatment is indicated, as compared with rest and nutrition, with the probability of a brief course. In this connexion one may note that of the recoveries in mental hospitals some 30% are discharged within three months and a further 25% within six months after admission.

The establishment of a psychiatric block as part of the organization of a general hospital would do more than anything else to give nurses and students understanding of mental symptoms and would correct the unfortunate impression that mental disorders are queer, incurable conditions dealt with in asylums.

In these days of varied schools and cults in psychiatry I would bring to your notice some words spoken by Dr. Edward Seymour at the conclusion of the Croonian Lectures on "Observations on the Medical Treatment of Insanity," delivered in May, 1831:

I hope, little as I have been able to say upon these subjects, that it is enough to prove that it is to the educated physician, to the man who is engaged in the constant discharge of the duties of his profession, that such cases should be made a subject of deep importance, that all his experience should be brought to bear, that all his faculties and observation should be concentrated in improving this portion of the medical art, not by studying it exclusively, but in conjunction with the other diseases of the human body, and thus removing a great

source of quackery and imposture . . . If we carefully investigate disease and neither resign that interesting and useful study to artful and designing persons nor suffer ourselves to be overcome by the momentary prejudices of the world, all experience has shown that medical practitioners so acting have received and will continue to receive the respect and homage of society.

#### References.

- <sup>(1)</sup> Gull: "Memoirs of John Conolly," by Sir James Clark, 1869.  
<sup>(2)</sup> Adolf Meyer: "Progress in Teaching Psychiatry," *The Journal of the American Medical Association*, Volume LXIX, September 15, 1917, page 361.

#### AMMONIUM PERSULPHATE IN "YEAST FOODS" AS A CAUSE OF ALLERGIC DERMATITIS IN BAKERS.

By F. S. HANSMAN, M.B., Ch.M. (Sydney), M.R.C.P. (London), Honorary Director of the Department of Bio-Chemistry, Royal Prince Alfred Hospital, Sydney.

"Bakers' eczema" and "bakers' itch" are diseases of antiquity, and through the centuries many aetiological factors have been recognized. Prosser White<sup>(1)</sup> adequately reviews the aetiology of dermatitis in bakers up to 1929. Another recent publication is the League of Nations "Report on the Bakery Trade,"<sup>(2)</sup> while in a report by the Ministry for Health, "On the Treatment of Flour with Chemical Substances,"<sup>(3)</sup> the question of dermatitis in bakers is mentioned.

It is only quite recently that any attention has been paid to chemical substances added to the flour at some stage in the baking process. In 1923, Tankard,<sup>(4)</sup> reporting a case of dermatitis in a baker, concluded that ammonium persulphate was the exciting factor. He considered that tissue injury was caused by the sulphuric acid which is produced when ammonium persulphate goes into solution. However, as the ammonium persulphate in the case he discusses was already mixed with the flour, and was in a concentration of six parts per 100,000, it is impossible to imagine that the amount of sulphuric acid produced from this amount of ammonium persulphate would be in sufficient concentration to irritate any skin. Tankard did not conduct any experiments to test out his hypothesis. In 1924, Prosser White<sup>(5)</sup> performed a long series of experiments on himself and volunteers to test whether ammonium persulphate could cause a dermatitis. He applied fairly strong solutions of ammonium persulphate in different media to the intact skin of normal individuals. His most crucial experiment was the application of ammonium persulphate in a dough mixture to the same portion of healthy skin for six hours each day for a period of eight weeks. He was unable to produce any evidence of dermatitis either in this or any other experiment. De Jong<sup>(6)</sup> investigated cases of bakers' dermatitis using all the ingredients of dough as test substances, and concluded that the heat of the bakehouse caused sodium chloride to crystallize on the skin, and that this crystallized salt led to the irritation of the skin. Schneider, quoted by Prosser White, used mice for his experiments and was unable to produce a dermatitis by the application to the skin of these animals of yeast

food containing ammonium persulphate. The League of Nations "Report on the Bakery Trade," dealing with the occurrence of dermatitis in bakers, incriminates principally the flour:

Blame attaches to the flour, the dust of which mechanically obstructs and irritates the skin. Different qualities of flour differ in their irritating capacity. A good quality of flour does not cause dermatitis, which, for example, is not found in biscuit factories where a superior quality of flour is used. Chemical products mixed with the flour are also blamed, as persulphates or nitrates of calcium or acid phosphates of lime; or again those chemicals used for whitening flour, e.g., chloride of lime and peroxide. Yeast, sugar and salt have also been blamed.

The last general list of causes is apparently added for completeness, and all constituents of the dough are inculpated. The survey of the literature shows that the aetiology of dermatitis in bakers is not yet fully comprehended, and that the part played by ammonium persulphate has not been properly recognized.

#### Scope of Investigation.

This paper has to do with an investigation into the cause of dermatitis in dough-mixers in New South Wales. During the last eighteen months there have been upward of thirty cases of dermatitis in bakers reported to the Trades Hall Union. In all these patients a history of hand-mixed dough was obtained. In some cases all the dough was handmade, in others the white dough was made by mechanical means and only brown dough was mixed by hand. Four cases have been fully investigated; as the response to test substances was identical in each of the four instances, it was concluded that similar aetiological factors were responsible for the dermatitis in the remainder of the cases.

#### Case Histories.

The case histories of three of these patients are as follows:

CASE I.—T.O.B. has been a dough-mixer for twenty years. He had never had a rash of any kind until twelve months ago. He began using a yeast food containing ammonium persulphate eleven months before the rash appeared. The rash began on his right arm in the form of papules and then spread to the left arm, and at its worst involved the whole of both arms and the back of the neck; there was also a slight rash on one instep. When he reported the rash he was "put off" work for fourteen days; by this time the rash had subsided. He returned to work for a fortnight and was "put off" again for three months. He went back at the end of three months for a week and had to give up again; he had not been able to work since as a dough-mixer. After the final outbreak the rash took about three months to settle down, and he still has a slight lesion of the fingers.

CASE II.—D.E.W., aged sixty-three years, has been a dough-mixer for thirty years. He had never had a skin rash up till September 5, 1929. He began using a yeast food containing ammonium persulphate in 1927. The rash appeared first over the site of a mild accidental scald on the left wrist. From this site the rash spread up the left arm, finally extending over the whole body by the end of a week. He reported the rash and was "put off" for one week. With treatment the rash gradually settled down and he was able to resume his occupation at the end of six weeks. He worked for a week, but the rash broke out again and he was away for nine weeks. He then went back for another week, after which he had to stay away for three months. He then went back and worked one night, but the rash came out immediately, and he left off work permanently. The rash has now gone again, except that perspiration causes the appearance of a faint rash which, however, soon disappears.

**CASE III.**—G.S., aged forty-five years, has been a baker for thirty years. He has been using a yeast food containing ammonium persulphate for two years. His first attack of dermatitis appeared eighteen months ago, and he has been off work on three occasions since. Until eighteen months ago he had never had any dermatitis.

The rash consists typically of a dermatitis of erythematous, papular, vesicular or erythematous-squamous type. In all cases the lesions began on the hands or forearms, and in some cases spread within a few days to other parts of the body. Fourteen patients were under clinical observation and in all the hands and forearms were involved; in four the face and neck were affected, and in seven the rash also involved the trunk below the waist line and the thighs, and in some instances the whole lower extremity.

#### Detailed Investigations.

The investigations on the four patients were carried out at a time when the dermatitis had become quiescent, and the lesions had practically disappeared. In each case there was at most only the slightest evidence that any skin defect had ever been present. The patients were investigated by means of testing their sensitiveness to solutions of substances used in dough-making. The material used for the test was applied both to areas that had been in contact with the dough and to areas that had never been exposed to the dough. Both scratch and contact methods were employed. The contact method gave the most instructive results. The results of the investigations are set out in Table I.

**Details of the Scratch Method.**—Except in the case of ammonium persulphate, one gramme of the test substance was well shaken with five cubic centimetres of 0·5% carbolic saline solution and after incubation for one hour at a temperature of 37° C. was centrifuged and the supernatant fluid used for testing. In the case of ammonium persulphate freshly prepared solutions of chemically pure ammonium persulphate in 0·5% carbolic saline solution were used, the strength of the solutions varying from 1% to 0·0001%. In each case the test substance was allowed to stay on the lightly abraded skin for ten minutes, then cleaned off.

**Details of the Contact Method.**—One cubic centimetre of the solutions, prepared as for the scratch method, was placed on cotton wool in a hollow, semi-rigid rubber container, and the latter was strapped on to the skin for from twelve to twenty-four hours. The cotton wool was in contact with the skin over a circular area of 1·5 centimetres diameter.

The results by the scratch method were of little value, as negative controls who had never been exposed to the constituents of dough gave reactions in every way comparable to those of the patients.

The application of a 1% solution of chemically pure ammonium persulphate to the skin of the abdominal wall for twelve hours gave in each of the three patients very striking positive results. In each case there was an erythematous area of from six to ten centimetres diameter. This lesion was indurated and showed numerous vesicles and papules. The lesion was very itchy and persisted as an erythematous irritable patch for several weeks. In two patients

the application of this substance to the abdominal wall determined a recurrence of the dermatitis on the arms, and this condition took several weeks to subside.

That a lesion was produced on a part of the skin which had not previously been exposed to contact with ammonium persulphate, and that this application to an unexposed part precipitated a recurrence over an extensive area that had been exposed, is striking presumptive evidence that we are dealing with an allergic reaction. Six normal patients have had a 1% solution of the same chemically pure ammonium persulphate applied for from twelve to twenty-four hours to different parts of their anatomy without producing any lesion whatsoever.

#### Experimental Investigations.

As this allergic condition is due to an inorganic substance which when applied to the naked skin in fairly strong solution does not cause any immediate tissue damage, it was considered that the problem was worthy of further study to ascertain if possible something of the nature of the action of ammonium persulphate on the skin. Four months after the first series of experiments on the patients, during which time there had been no further exposure to ammonium persulphate, experiments with different inorganic salts were carried out on two of the three patients to ascertain what radical of the ammonium persulphate was responsible for the reaction. The solutions of the salts were applied by the contact method to the abdominal wall and left on for twelve hours. A 1% solution of each salt was used. In the case of hydrogen peroxide a 3% solution was used. The following substances were employed:

1. Ammonium sulphate, to see if the saturated salt  $(\text{NH}_4)_2\text{SO}_4$  would cause a reaction.
2. Ammonium sulphate in a 3% solution of hydrogen peroxide, to see if the saturated salt plus an oxidizing agent would cause a reaction.
3. Hydrogen peroxide, a 3% solution, as a control on 2.
4. Zinc sulphate, to see if the sulphate radical would cause a reaction.
5. Ammonium chloride, to see if the ammonium radical would cause a reaction.
6. Sodium perborate, to see if a perborate would have the same reaction as a persulphate.
7. Potassium persulphate, to see if it was the persulphate that caused the reaction.
8. Ammonium persulphate, to see if it was a specific reaction to this salt.

In both patients the ammonium persulphate and the potassium persulphate gave an equal reaction. There resulted a large irritable area of erythema which was indurated and showed numerous vesicles and papules. No lesion of any kind developed from the application to the skin of solutions of any of the other substances. We concluded that the persulphate radical was responsible for the sensitized state.

Experiments were then conducted to determine whether any antibody existed in the serum, using the Prausnitz-Küstner method of passive transfer.<sup>(7)</sup>

Blood was taken from the patient E.J.W.; the serum was separated and allowed to stand for ninety-six hours at room temperature. Intracutaneous injections of serum were given into three areas, "A," "B" and "C," of the flexor surface of the left forearm of a normal individual; for each area 0·1 cubic centimetre of serum was used. The serum caused a definite reaction manifested by an area of erythema and

TABLE I.  
*Scratch Test.*

T.O.B., Case I.	E.J.W., Case II.		G.S., Case III.		A.T., Case IV.		Control ♀ R.M.		Control ♀ J.W.		Control ♂ H.T.	
	Reading at end of 1 hour.	Reading at end of 18 hours.	Reading at end of 1 hour.	Reading at end of 18 hours.	Reading at end of 1 hour.	Reading at end of 18 hours.	Reading at end of 1 hour.	Reading at end of 18 hours.	Reading at end of 1 hour.	Reading at end of 18 hours.	Reading at end of 1 hour.	Reading at end of 18 hours.
Flour 1	++	++	++	++	++	++	++	++	++	++	+++	+++
Flour 2	++	++	++	++	++	++	++	++	++	++	+++	+++
Flour 3	++	++	++	++	++	++	++	++	++	++	+++	+++
Wheatmeal	-	-	-	-	-	-	-	-	-	-	-	-
Salt	-	-	-	-	-	-	-	-	-	-	-	-
Peppermint	-	-	-	-	-	-	-	-	-	-	-	-
Yeast	-	-	-	-	-	-	-	-	-	-	-	-
Food containing 0.5% Ammonium Persulfate	-	-	++	++	++	++	++	++	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Scratch Test on Unexposed Part, using Abdomen.												
Flour 1	++	++	++	++	++	++	++	++	++	++	+++	+++
Flour 2	++	++	++	++	++	++	++	++	++	++	+++	+++
Flour 3	++	++	++	++	++	++	++	++	++	++	+++	+++
Wheatmeal	-	-	-	-	-	-	-	-	-	-	-	-
Salt	-	-	-	-	-	-	-	-	-	-	-	-
Peppermint	-	-	-	-	-	-	-	-	-	-	-	-
Yeast	-	-	-	-	-	-	-	-	-	-	-	-
Food containing 0.5% Ammonium Persulfate	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Contact Test (12 to 24 hours).												
Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.	Abdomen.
Flour 1	++	++	++	++	++	++	++	++	++	++	++	++
Flour 2	++	++	++	++	++	++	++	++	++	++	++	++
Flour 3	++	++	++	++	++	++	++	++	++	++	++	++
Wheatmeal	-	-	-	-	-	-	-	-	-	-	-	-
Salt	-	-	-	-	-	-	-	-	-	-	-	-
Peppermint	-	-	-	-	-	-	-	-	-	-	-	-
Yeast	-	-	-	-	-	-	-	-	-	-	-	-
Food containing 0.5% Ammonium Persulfate	-	-	-	-	-	-	-	-	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-
Ammonium Persulfate	1.0000%	0.1000%	0.0100%	0.0010%	0.0001%	+	+	+	-	-	-	-

some oedema which took forty-eight hours to subside completely. At the end of forty-eight hours, into "A" was injected 0.1 cubic centimetre of sterile tap water, into "B" 0.1 cubic centimetre of a 0.2% solution of ammonium persulphate in sterile tap water. This solution was prepared immediately before use and was not heated. Over "C" was placed, by the contact method, a 0.1% solution of ammonium persulphate, also prepared immediately before use. The latter was left in contact for fifteen hours. A control injection of 0.1 cubic centimetre of 0.2% ammonium persulphate was made into the opposite arm at a site corresponding to the similar injection of the left arm, and a control contact experiment with 0.1% ammonium persulphate was likewise made on this arm. The injections of tap water and ammonium persulphate into the left arm were quite painless, but caused a transitory erythema which lasted three hours. The contact experiment on the left arm gave no immediate positive response. The injection of ammonium persulphate on the right arm produced an erythema with a small central blanched area. The erythema persisted for twenty-four hours. The control contact experiment gave no reaction. At the end of twenty-four hours there was no reaction over any site that could be considered a positive result.

The blood of a second patient, G.S., was taken and allowed to clot. The serum was immediately removed and placed in a refrigerator for twenty-four hours, and Prausnitz-Küstner experiments were performed on three subjects, a similar technique to that employed in the first case being used, except that larger doses of serum were injected intracutaneously. In one case injections of 0.2 cubic centimetre of serum were given, in another the volume was 0.4, and in a third case 0.5 cubic centimetre. The ammonium persulphate and controls were injected or applied at the end of twenty-four hours in two cases, and at the end of forty-eight hours in the third case, as in this latter patient there was a definite reaction to the serum, although he had never had human serum previously injected. All results were definitely negative.

In the case of the subject who had had the largest injection of serum, a further application of a fresh 1% solution of ammonium persulphate was made at the end of a week to the site of the injection, and to the control site which had previously served as a control the week before. After twenty-four hours there was a definite papulo-vesicular erythematous reaction over the site where the serum had been injected, but the control site still gave a negative result. This experiment was performed as it was thought that a few days might be necessary to "fix" the antibody. This subject had had several applications of ammonium persulphate to various parts of the body some months previously. In order to test further the question of "fixing" of antibody, serum was injected into a fresh subject. As much as possible (about 0.6 cubic centimetre) was injected intracutaneously into the flexor surface of the left forearm. A 1% solution of ammonium persulphate was then applied to the serum site and to a corresponding site on the other arm. Each day therefrom a freshly prepared 1% solution of ammonium persulphate was applied to each site and allowed to remain for approximately eighteen hours. After the fifth application, which was made on the seventh day (there was an interval of forty-eight hours on two occasions), there appeared on both arms at the site of experiment a marked papulo-vesicular erythematous patch of dermatitis. The lesion was somewhat more severe over the site that had received the injection of serum. This rash lasted about a week, was very itchy and faded more slowly on the left arm (the site that had received the serum injection).

There is definite evidence, therefore, that an experimental dermatitis can rapidly be produced by the application of ammonium persulphate. To prove this further, another subject was taken who had never previously been exposed to ammonium persulphate. A 1% solution of ammonium persulphate was applied over an area of the abdominal wall without any previous injection of serum. Each day a freshly prepared solution was reapplied over the same site and left on for approximately eighteen hours. After the third application an area of papulo-vesicular erythematous dermatitis appeared which persisted for several days.

These experiments were interpreted as follows:

1. A 1% solution of ammonium persulphate is able to produce a dermatitis when applied for from three to five days to the same area, provided that freshly prepared solutions are used each time.

2. The Prausnitz-Küstner method of passive transfer of sensitivity gave indefinite results. Only in one case was a reaction produced, and this subject had previously had a moderate amount of exposure in various experiments to ammonium persulphate.

#### Discussion.

The evidence produced in this paper proves that ammonium persulphate can cause a dermatitis under conditions similar to those of dough-making. The concentration of ammonium persulphate in the yeast food used by our patients is 0.5%. This is mixed with 120,000 times its bulk of flour and an almost similar bulk of water, so that although the initial dilution was one in 200, the final dilution is at least one in 300,000. Under the conditions prevailing in dough-making, the minimum period of exposure to ammonium persulphate necessary to produce a dermatitis is probably at least several months; in our three cases, which were studied fully, the periods were eleven months, eighteen months and two years respectively. It is possible, however, if the yeast food is handled in a moist form before dilution with the ingredients of dough, that the dermatitis can develop in a shorter time. During the period of exposure the patient is apparently becoming sensitive. Once a certain stage is reached there is an acute and extensive attack of dermatitis which is chronic and resistant to treatment. Once a patient has become sensitized, a very short subsequent exposure is sufficient to stir up the dermatitis, even though several months have elapsed since the last exposure. The skin of the whole body becomes sensitive, though the exposure to ammonium persulphate is restricted to the upper extremities. In sensitized patients the application of a 0.5% solution of ammonium persulphate for a few hours to a portion of skin of the abdominal wall not previously exposed, causes a severe local lesion and a return of the dermatitis on the portions that have been exposed. This is strong evidence of the presence of an allergic state.

The work of Prosser White and others indicates that a solution of ammonium persulphate as strong as 1% is not a tissue irritant, and our own experiments on normal subjects support this conclusion, but while ammonium persulphate is not a tissue irritant in the sense that it causes recognizable damage to the skin whenever it is applied, the results obtained by us in producing experimental dermatitis prove that a patient can be sensitized in a very short time to this substance. That our results are in direct opposition to those obtained by Prosser White and Schreider in the production of experimental ammonium persulphate dermatitis is, I think, due to the fact that we used only fresh solutions which were applied within a very short time of being prepared, a few minutes at most, whereas presumably the other writers, as there is no evidence from their papers to the contrary, did not use fresh solutions.

It must be remembered in this regard that solutions of ammonium persulphate decompose with some rapidity even at room temperature. In some early work of our own the same solution was applied daily for seven successive days without any dermatitis developing, but when the precaution was taken of using a freshly prepared solution each day the results obtained were very different.

The inflammatory reaction is caused by the persulphate radical, and this leads to speculation on the *modus operandi* of this chemical. The breaking-down products of ammonium persulphate and potassium persulphate, both of which are able to cause a reaction in a sensitized person, are very different. Ammonium persulphate breaks down to ammonium sulphate, sulphuric acid and oxygen. The oxygen, however, combines with ammonia to form nitric acid. Potassium persulphate breaks down to potassium sulphate, sulphuric acid and oxygen. The oxygen is then free to combine with anything available. The damage to the skin, therefore, seems to be caused by the intact radical  $S_2O_8^{2-}$ , as this alone is common to both salts.

The results of our attempts to test whether the serum contains antibody by the Prausnitz-Küstner method of passive transfer were by no means conclusive. This may have been due to the fact that the serum was taken from the patient when the dermatitis had subsided. Different results may have been obtained if we had taken the serum during an acute attack. This will be tested when a suitable opportunity arises. However, we are more inclined to the opinion that, as the antibody did not reveal itself in the serum, though we knew the patient was still sensitive to ammonium persulphate, the antibody is attached to the cells of the fixed tissues. Kolmer, in a recent publication,<sup>(8)</sup> indicates such a type of antibody in dermatitis.

As regards the future use of ammonium persulphate in the baking trade, there is no doubt that this substance is a potent danger to bread makers when the dough is mixed by hand. It has already necessitated a large number of dough makers giving up their occupation. The results of this investigation would indicate that the use of ammonium persulphate as a yeast food should not be permitted unless manual contact with the dough is prevented until the dough has quickened. Where all the dough is mixed by machinery there is no reason why the use of ammonium persulphate should be prohibited. Once the ultimate dilution of ammonium persulphate with the other constituents of the dough has been attained and the dough is quickened, there is firstly so great a dilution of ammonium persulphate that it would not be effective in causing a dermatitis, and secondly, during quickening, the persulphate is reduced to the sulphate so that its power to cause tissue damage is gone.

#### Summary.

1. A study of the dermatitis in dough-mixers in New South Wales shows that ammonium persulphate present in certain yeast foods is the cause.
2. The allergic nature of this dermatitis is proved.
3. The production of experimental ammonium persulphate dermatitis has been accomplished by the

use of a 1% solution of chemically pure ammonium persulphate. The reason for failure of other experimenters to produce this dermatitis is discussed.

4. Attempts to demonstrate by the Prausnitz-Küstner method antibody in the serum of patients who have had ammonium persulphate dermatitis were inconclusive.

5. The *modus operandi* of the ammonium persulphate in causing the lesions was investigated experimentally and the results are discussed.

6. Our conclusions as to the future use of ammonium persulphate in the bakery trade are given.

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#### References.

<sup>(1)</sup> R. Prosser White : "The Dermatogoses, or Occupational Affections of the Skin," Third Edition, 1928.

<sup>(2)</sup> Occupation and Health, International Labour Office, Geneva, 1928, Brochure Number 88 : "The Bakery Trade."

<sup>(3)</sup> Ministry of Health : Report of the Experimental Committee on the Treatment of Flour with Chemical Substances, London, 1927.

<sup>(4)</sup> A. R. Tankard : "Note on Bakers' Eczema," *The Lancet*, August 11, 1923, page 279.

<sup>(5)</sup> R. Prosser White : "Bread-Bakers' Itch," *The Journal of State Medicine*, Volume XXXII, page 561, 1924.

<sup>(6)</sup> O. De Jong : "Aetiology of Dermatitis in Bakers," *The Lancet*, Volume I, page 80, 1923.

<sup>(7)</sup> Carl Prausnitz and Heinz Küstner : "Studien über die Überempfindlichkeit," *Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten*, Volume LXXXVI, Number II, page 180.

<sup>(8)</sup> J. A. Kolmer : "Allergy, a Critical Review of the Mechanism and Terminology of Allergy," *Journal of Laboratory and Clinical Medicine*, Volume XIII, Number 10, July, 1928.

#### THE EFFECT OF THE GAMMA RAYS OF RADIUM AND OF X RAYS ON BLAIR BELL'S COLLOIDAL LEAD.

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ONE of the chief defects of the treatment of malignant disease by Blair Bell's colloidal lead is the profound anaemia that it produces. After 150 to 200 milligrammes of lead have been given intravenously in two or three doses, the patient is usually so very anaemic that he can be persuaded only with difficulty to continue the treatment. A great step in advance would be made if it were possible to concentrate in the tumour a substantial portion of the circulating lead of the body. This would enable effective treatment by lead to be undertaken without the production of the profound anaemia.

In a former paper<sup>(1)</sup> we showed that light was able to attract to itself colloidal lead and silver.

Whether the movement of these colloidal metals under the influence of light is due to a charge effect or to photophoresis, we have not yet determined. The effect was so marked that when the microscope was turned upside down and the source of light was consequently above the preparation, the movement of the particles towards the light was apparently just as rapid as the movement to the light in the direction of gravity. Moreover, we found that violet and ultra-violet light was much more effective in causing movement than light at the middle or red end of the visible spectrum.

It occurred to us that if other forms of radiant energy caused a similar movement of colloidal lead and silver particles, it might be possible to use such agents in the body for concentrating lead in tumours. Experiments were therefore carried out with the  $\gamma$  rays of radium. Tubes containing radium salt, screened with platinum or gold effectively to exclude the  $\alpha$  and  $\beta$  rays, were used in these experiments in the following manner.

#### **Lead and Silver Colloid Exposed to the Gamma Rays of Radium.**

In the initial experiments the radium tube was placed in a solid block of lead, providing 25 millimetres of lead screen all round the tube. The block of lead was divided into two symmetrical halves and a cavity hollowed out in the centre just sufficiently large to take a 20-milligramme tube of radium. This lead screen was used so that the worker making microscopical observations might be reasonably protected from the  $\gamma$  rays. A window was cut in one side of the lead block, 5 millimetres square and 25 millimetres in depth. Through this window the  $\gamma$  rays of radium could emerge unobstructed by the lead, whereas from every other position of the radium tube a very marked reduction (approximately 50%) of  $\gamma$  rays was effected by the thick lead screen.

Colloidal silver was used in the earliest experiments because, firstly, it was not liable to oxidation, and secondly, it was so much more reactive to light than colloidal lead. The silver colloid was protected by 0.5% gelatine in water and the colloid contained no added salts. The gelatine used was the best French preparation (Coignet) and contained extremely little electrolyte. Coverglass preparations of this colloid were set up as usual for dark-ground illumination, using the cardioid condenser and carbon arc lamp as described in our former communication. The field was illuminated through a yellow light filter so that the particles could be observed without being moved sensibly during the time of observation. Rays from the radium were then directed upwards through the centre of the preparation, the radium being placed just under the mirror of the microscope and in the optical axis of the latter. After several hours' exposure of the preparation no movement of the silver to or from the radium could be made out. The radium was then so placed that the  $\gamma$  rays passed through the preparations from side to side across the stage of the microscope. After an exposure of several hours no translatory movement of the silver particles had occurred.

It was thought that by placing the radium nearer the preparation better results might be obtained.

Coverglass preparations therefore of a silver colloid were placed directly on the lead block so that the  $\gamma$  rays from the window passed through the centre of the preparation. After exposure overnight a dark-ground microscopical examination in the morning revealed no displacement of the particles. This experiment was repeated using lead colloid and gave also negative results.

Finally, the radium tube was laid on the coverglass of a silver colloid preparation and the latter exposed overnight to its action. In the morning no concentration of the silver colloid could be observed either macroscopically or microscopically. The particles were still found to be in active brownian movement just as before exposure to the radium. No settling on either surface of the chamber under the influence of the  $\gamma$  rays could be detected.

Of capillary tubes of 1 millimetre internal bore and 50 millimetres length, some were then filled with colloidal lead made according to Blair Bell's prescription, some were filled with the colloidal silver above described, while others were filled with the same colloids suitably diluted for macroscopic observation. These various tubes were inserted into the window of the lead block so that one end of each tube was in actual contact with the radium tube. The capillary tubes containing the colloid were exactly horizontal. These tubes were examined after two and three days' exposure, but no increase in concentration towards the radium could be detected. The tubes appeared in fact to be unchanged.

Experiments were then tried in which the radium tube was in actual contact with the colloidal lead or silver solution. For this purpose small flat-sided rectangular bottles, 40 millimetres high by 40 millimetres wide and 10 millimetres thick, were used to contain the colloid. The bottles had small necks which could be corked and through which a wire was passed that suspended the radium tube. These bottles were placed upright and the radium tube was suspended perpendicularly towards one side of the interior of the bottle. After filling with the colloid the bottles were tightly corked, and in the case of the lead the mouths paraffined over to prevent further oxidation. Slight oxidation of the lead was allowed to occur by admitting, before closure, a little air into the bottle in order that the colloid might gradually sink leaving a clear watery layer above. It was hoped that a higher concentration of the lead might be found near the radium tube which would be shown by the upper surface of the colloid being higher in its neighbourhood. On standing for twenty-four hours no effect of the radium could be observed. The experiment was therefore continued for a further forty-eight hours. At the end of this time the upper surface of the colloidal lead was distinctly higher in that side of the bottle in which the radium was placed, but this was considered, after a considerable amount of experimental work, to be due to the heating effect of the radium. The radium having a temperature  $1.5^{\circ}\text{C}$ . higher than that of the surrounding medium would slightly increase the brownian movement of the particles around it and so cause them to

rise higher on that side of the bottle. There would also be slight convection effects tending to raise the level of the colloid above the radium. In settling, the colloidal particles were apparently increasing in size or, alternatively, the smaller particles were being dissolved. We were not able to detect any satisfactory evidence of attraction of colloidal lead by the radium.

Light affected the lead very markedly in the same bottles, drawing the lead colloid towards itself so that the upper level of the settling emulsion was tilted at an angle and was not everywhere strictly horizontal as in the dark.

#### Lead Colloid Exposed to X Rays.

Dark-ground coverglass preparations were prepared of Blair Bell's colloidal lead, as described previously, and exposed as follows:

Preparations exposed to the rays from a tube working at 100 kilovolts and 4 milliamperes:

- No. 1 preparation exposed for 1 minute at 20 inches distance using a 2-millimetre aluminium filter.
- No. 2 preparation exposed for 3 minutes at 20 inches distance using a 2-millimetre aluminium filter.
- No. 3 preparation exposed for 5 minutes at 20 inches distance using a 2-millimetre aluminium filter.
- No. 4 preparation exposed for 10 minutes at 20 inches distance using a 2-millimetre aluminium filter.
- No. 5 preparation exposed for 10 minutes at 20 inches distance with the same filter and 10 minutes at 12 inches distance without the filter.
- No. 6 preparation exposed for 10 minutes at 20 inches distance with the filter and 20 minutes at 12 inches distance without the filter.

The slides were immediately examined under the microscope by dark-ground illumination in the usual way, visible light filtered through a yellow screen to eliminate light effect being used. In no case was any effect observed. On removing the yellow filter and allowing white light to act on the particles previously exposed to X rays the white light immediately produced its attractive effect as already reported.<sup>(1)</sup> So that under the conditions described we have not been able to show that X rays move colloidal lead particles in any definite direction.

#### Conclusions.

Lead and silver gelatine-protected colloids, which are attracted by light, are not attracted in the same way by the  $\gamma$  rays of radium nor by X rays, in the doses described.

#### Reference.

<sup>(1)</sup> W. J. Penfold and J. Sutherland: "An Effect of Light on Blair Bell's Colloidal Lead," THE MEDICAL JOURNAL OF AUSTRALIA, June 7, 1930, page 730.

#### MACROGENITOSOMIA AND OTHER DISTURBANCES OF GROWTH AND DEVELOPMENT.

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MACROGENITOSOMIA is the name coined by Pelizzi to designate the group of cases that are characterized by precocious sexual development associated

with excessive somatic development, as distinct from those cases of hypergenitalism in which the body as a whole retains its normal characters. Much misconception exists as to the rôle of the endocrine organs in these cases and therefore the report of a case brought before the Alfred Hospital Clinical Society and a comparison with other known disorders of sexual development seems opportune.

J.D., aged nearly eleven years, came to me with the history that four years previously he had an attack of sudden severe pain in the head which caused him to run round screaming. This was succeeded by twitching of the eyeballs, vomiting and unconsciousness lasting for six or seven hours. He was admitted to the Children's Hospital on the following day, February 10, 1927, with the provisional diagnosis of encephalitis. On examination there he was found to be very drowsy, had slight neck stiffness, but no Kernig's sign. The eyes were normal and eye grounds clear. There was a doubtful extensor plantar reflex on the left side. The cranial nerves were normal. Lumbar puncture showed fluid under pressure, a few red blood cells, ten lymphocytes per cubic millimetre. Culture yielded no growth. Numerous lumbar punctures were performed for the relief of headaches. X ray examination on March 28, 1927, revealed slight evidence of tumour in the pituitary region, the fossa being slightly flattened and the posterior clinoid process could not be followed distinctly. The Wassermann test gave no reaction and the sugar concentration was within normal limits.

On May 25, 1927, bilateral papilloedema of very low grade appeared with secondary low grade atrophy of the right disc.

On June 1, 1927, drowsiness was gradually vanishing, the child was sent to Hampton Convalescent Home. Here some vertigo and ataxia were noted. This passed off and the child was apparently well when discharged on August 17, 1927. Since then he has developed complete optic atrophy of his right eye, partial atrophy of the left, a progressive myasthenia, progressive premature development of secondary sexual characters, change of voice towards adult type, and excessive length of long bones. His mental development is precocious. Latterly he has shown slight choreiform movements of his arms. He still shows a tendency to somnolence. His height is 155 centimetres (five feet two inches), his weight 31.5 kilograms (five stone), his arm span 150 centimetres (five feet). His limbs are excessively long and his muscular development very poor. There is no obesity. There is considerable growth of hair on his upper lip, slight growth of axillary hair, excessively long and abundant pubic hair, and his penis and testes are equivalent in size to those of a boy of eighteen. His urinary output is normal and there is no disturbance of sugar tolerance.

X ray examination reveals ossification of the bones of the hands and phalanges equivalent to that of a normal boy of sixteen. The skull shows very slight widening of sutures, doubtful increase of convolutionary markings, flattening of the *sellae turcicae*, normal anterior clinoid processes, disappearance of posterior clinoid processes and *dorsum sellæ*.

Briefly stated, this case presents evidence of a mid-brain lesion, the early symptoms suggesting an acute inflammatory or vascular lesion, with interference with the anterior *corpora quadrigemina* and the superior cerebellar peduncles, increased pressure and distension of the third ventricle with gradually developing papilloedema and secondary optic atrophy. The later developments suggest, however, a lesion involving the pineal body, it being well known that tumours of the pineal body in children are often associated with increased growth and sexual development. There is now no evidence of tumour and the sudden onset of symptoms is

against the probability of such a cause. The usual pathology of the pineal body is the occurrence of teratomata and cystic tumours arising during the involutionary period of the gland. It is stated that it is not uncommon for haemorrhages to occur even into the normal cysts that are formed during involution, and that is suggested as a possible explanation in this case. The great increase in length of the long bones without increased growth of other tissues, the myasthenia, the precocious mental development and somnolence are all usual accompaniments of pineal lesions and do not occur in association in disorders of the adrenals, gonads or pituitary. In fact it is well to emphasize here that hypergenitalism never occurs in pituitary lesions of any kind. The only suggestion of a possible pituitary lesion in this case is the X ray picture of the pituitary fossa, but Dott has shown that this picture is readily produced in children by increased intracranial pressure, particularly when the third ventricle is much distended; he cites a case in which the lesion was diagnosed symptomatically in the mid-brain and removed by operation, ventriculography having revealed a distended third ventricle dipping into the pituitary fossa. In a case under my own care, of an apparent suprasellar tumour with the adiposo-genital syndrome of pituitary disease, autopsy revealed an extremely distended third ventricle pouching into the sella and completely destroying the pituitary gland.

According to Horrax and Bailey, *pubertas praecox* occurring in a patient who shows increased intracranial pressure with involvement of the *corpora quadrigemina*, is pathognomonic of pineal tumour.

The pineal body lies centrally over the anterior end of the *aqueductus sylvii* at its entrance to the third ventricle, partially overlapping the anterior *corpora quadrigemina* on either side and in close contact with the superior cerebellar peduncles and the thalamus. Enlargement is apt to occlude the posterior end of the third ventricle and to press upon the *corpora quadrigemina* and the cerebellar peduncles with consequent disturbance of the functions of those parts, chiefly distension of the third ventricle, interference with ocular movements and with the functions of the cerebello-thalamic tracts.

The pineal develops rapidly during childhood, reaching its maximum development at about five years of age and then undergoing changes that are regarded as involutionary until about the age of puberty, but there is much evidence that it does not become functionless throughout life. Most modern anatomists regard the mammalian pineal as a morphological adaptation, not a vestigial organ or vestige of the eye of lower animals. It apparently contains no nervous elements, being composed mainly of neuroglial and connective tissues with the pineal cells. During involution the neuroglial and connective tissues increase and small cysts are formed, which ultimately contain the small concretions known as pineal sand. But the gland retains throughout life sufficient glandular structure to suggest that it is never functionless, and experi-

ments seem to show that the adult pineal has functions other than the prepubertal influence on growth and development.

The manner in which the pineal influences sexual and somatic development is, as Keith says, an enigma. The usually accepted belief is that it restrains gonadal functions and that during involution this restraint is gradually removed. This view is supported by some of the extirpation experiments that have been performed, notably by Horrax and Bailey and by Foa, but Dandy failed to obtain any results in dogs, and feeding experiments, where they have shown any result, have suggested that pineal substance stimulates growth. Clinical cases can be cited in support of either view. We may, however, find an analogy in the case of the pituitary, recent experiments of Crew and Weisner suggesting that extracts of the anterior pituitary may either inhibit or stimulate growth, according to the method of preparation.

All pineal tumours or lesions are not associated with hypergenitalism any more than are all tumours of the ovary, so that out of twenty-one cases of pineal tumour reported in children and confirmed by autopsy, only eight have shown this association. It is, of course, essential that the lesion shall have developed in the early years of childhood, before the involution of the pineal. It has been suggested that only tumours of a certain nature, such as teratomata, will produce the syndrome, and that it is something inherent in the tumour itself that is the cause; all evidence is against this view.

#### **Disturbances of Sexual Development and Growth.**

It may be of interest to compare this case with other instances of aberration of sexual growth and development. Apart from the effects of disease in arresting growth temporarily or permanently or the dwarfism or infantilism associated with cretinism, mongolism and a few cases of gross congenital abnormality, these disturbances group themselves into well defined classes.

#### **Primary Hypergenitalism or Congenital Hypergonadism.**

Cases of primary hypergenitalism or congenital hypergonadism are frequently met with in practice, but only occasionally is advice sought for the condition itself. They are more often found during the course of examination and are often erroneously attributed to disorders of distant endocrine organs. There is a tendency to largeness of build in the earlier years of life with precocity in development of the sexual organs and secondary sexual characters, but owing to the premature ossification and union of epiphyses that always accompanies premature gonadal activity, growth tends to cease at or about the age of puberty and the ultimate height is not often great. It is simply accelerated development during childhood and leads as a rule to normal manhood. Its chief importance lies in the tendency to irregular sexual practices during childhood.

*Macrogenitosomia.*

**Macrogenitosomia** results from several conditions. **Tumours or Lesions of the Pineal Body.** These have been sufficiently discussed. They are more common in males.

**Tumours of the Suprarenal Cortex.** These cases occur chiefly in females, though occasional cases have been reported in males. They are characterized by a tendency towards masculinity in the females and increased virility in the males. There is generally increased muscularity and enhanced energy, and a general hirsuties in addition to the precocious distribution of the sexual hair; the title of the "Infant Hercules" is often applied to this type.

**Tumours of the Gonads.** These also occur more often in females, many cases being reported in girls, and operative removal of the ovary often resulting in regression of the sexual development and cure of the condition. Tumour of the testis is exceedingly rare before puberty, only two cases associated with macrogenitosomia having apparently been reported.

*Primary Hypogenitalism or Congenital Hypogonadism.*

Apparently in primary hypogenitalism or congenital hypogonadism there is a failure of development of the gonads which may be complete, as in congenital absence of the testes, or merely delayed or incomplete. The lesser types of delayed development are very common and are generally attributed to pituitary faults, but, although in all gonad deficiencies the pituitary is apt to be enlarged, it is not a primary factor in these cases. They are not the typical fat boys of the Fröhlich syndrome, but rather tend to the feminine type, with a female distribution of fat about the breasts, *mons veneris*, nates and thighs, broad pelvis and normal mentality, not necessarily even girlish in character. Union of epiphyses is delayed and the subjects therefore tend to be tall, but have not the grossness of the pituitary hypogenitalism. There are no other signs of pituitary disturbance.

*Hypogenitalism of Pituitary Origin.*

It must be again emphasized that pituitary disturbance of whatever nature, even if in other respects signs of hyperpituitarism are present, always inhibits sexual development or leads to loss of sexual function in the adult. No proven case of increased sexual development has ever been reported, even in cases of chromophilic tumour of the pituitary, where it might reasonably be expected. It must be remembered, however, that owing to the tumour growing in a very confined space, it must soon interfere with the functions of its own gland. Nevertheless, it is an important diagnostic clinical fact, not always recognized, that sexual development and function are inhibited. Several varieties of disturbance are noted in pituitary disease, the differences being dependent partly upon the resultant effect of the disease on the anterior and posterior lobes of the gland respectively.

**Adiposo-Genital Syndrome with Diabetes Insipidus.** Patients with adiposo-genital syndrome with *diabetes insipidus* exhibit some of the features of the Fröhlich syndrome, but are rarely as gross as regards their obesity and, although fat, may not be otherwise overgrown.

**Dystrophia Adiposo-Genitalis.** **Dystrophia adiposo-genitalis** patients are the gross, obese, overgrown, lazy individuals with arrest of sexual development at an infantile stage. They are also often mentally retarded or at least slow witted. The condition is generally associated with gross disease of the pituitary, such as tumour, but may also be due to the secondary effects upon the pituitary of a tumour situated elsewhere and producing increased intracranial pressure. There is little doubt that this condition indicates a destructive lesion of the anterior lobe and is the most common condition associated with pituitary lesions. It occurs even where the over-action of the anterior lobe of the pituitary is manifested by gigantism or acromegaly. It is found in persons shown by autopsy to have complete absence of the anterior lobe. But in no disorder of the pituitary is the reverse condition of hypergenitalism ever seen.

**Gigantism and Acromegaly.** Gigantism and acromegaly are due to the presence of a chromophilic tumour of the anterior lobe, gigantism occurring if the onset is before the age of puberty and acromegaly in adult life. In the former there is arrest of sexual development and function in the presence of somatic overgrowth, while in the latter there is loss of sexual function and in some cases regression of sexual growth and secondary sexual characters.

**Pituitary Infantilism.** There is in pituitary infantilism a dwarfing of the whole body associated with sexual infantilism, the patient often reaching middle age with the form and sexual development of a young boy.

**Conclusion.**

I have presented the history of a patient who clinically suggests that he is a victim of a very rare condition, a pineal lesion. Only an autopsy, which does not seem likely in the near future, could furnish absolute proof. I have briefly, without entering unnecessarily into detail, compared it with other conditions of disturbance of growth and sexual development. I do not think the clinical diagnosis can reasonably be disputed.

**Acknowledgement.**

I desire to thank Dr. I. Jeffreys Wood for the clinical notes of the patient while he was in the Children's Hospital.

**Bibliography.**

- N. M. Dott: "Discussion on Pituitary Disorders," *The British Medical Journal*, December 24, 1926, page 1040.
- G. Holmes: "Discussion on Pituitary Disorders," *The British Medical Journal*, December 24, 1926, page 1035.
- A. Keith: "Human Morphology and Embryology," 1923, page 108.

- R. J. A. Berry: "Brain and Mind," 1928, page 299.  
 R. G. Hoskins: *Abt's Pediatrics*, Volume IV, Chapter LXXXV, page 741.  
 O. T. Schultz: *Abt's Pediatrics*, Volume VIII, Chapter CXCHII, pages 660, 663.  
 Harvey Cushing: "Acromegaly from a Surgical Stand-point," *The British Medical Journal*, July 2, 1927, page 1; July 9, 1927, page 48.  
 G. Horrax: "Oxford Medicine," Volume III, Chapter XVII, page 1017.

## Reports of Cases.

### A PNEUMOTHORAX APPARATUS.

By BRUCE HUNT, M.D., M.R.C.P.,  
*Assistant Physician, Children's Hospital, Perth.*

THE pneumothorax apparatus, illustrated herewith, is claimed to possess several advantages over the types more commonly in use.

A wooden cabinet, opening along its longest edge, is mounted upon a wooden base, Y, being attached thereto by one segment only, so that the hinged door, X, can be freely opened. The fixed segment of the cabinet has a flush front, which is recessed for bottles, C and D, and taps, B and E. Bottles and tubes are permanently clamped in place, except only for tube, F, containing sterile cotton wool, which is retained in position by a spring clip.

Tap B has three positions; when horizontal, with the black dot down as shown, bottle C is in free communication with the external air through a vent at the back of the tap; when the tap is vertical the bottle is connected directly to the bellows, A; when the tap is horizontal, with the black dot upwards, the carrying position, the bottle is completely shut off from both bellows and external air.

Tap E has three positions. When the frosted glass tip points to the right (the carrying position, as shown in the diagram), then bottle D, manometer, and tube H leading to the patient are all shut off from each other; when the tip points vertically upwards, that is, towards the manometer, the manometer and tube H are in communication with each other, bottle D being shut off; when the tip points to the left, then bottle D and tube H are in communication (the filling position).

G is a glass valve to prevent the fluid being expelled from the manometer by violent coughing. The remainder of the apparatus requires no description.

Bottle D is filled with air by attaching the bellows to the glass window, K, and pumping till the fluid reaches the lower zero level; tap E is then turned from the filling to the carrying position, the bellows is replaced and the apparatus is ready for use. Up to 500 cubic centimetres

may be allowed to flow in by gravity, B being horizontal, with the black dot down; if it is desired to introduce a larger quantity, turn up B to the vertical position and pump gently.

The apparatus is in use in several Viennese clinics. The following advantages are claimed for it:

1. Extreme ease of manipulation. No clamps are used and the controls can be easily moved by the left hand, while the right hand holds the needle in the chest wall.

2. Extreme portability. With the tap in the carrying position it is impossible to spill any of the fluids, even if the apparatus is turned completely upside down.

The total weight of the apparatus, filled with water ready for use, is only nine pounds.

### SPINAL HYPERTENSION.

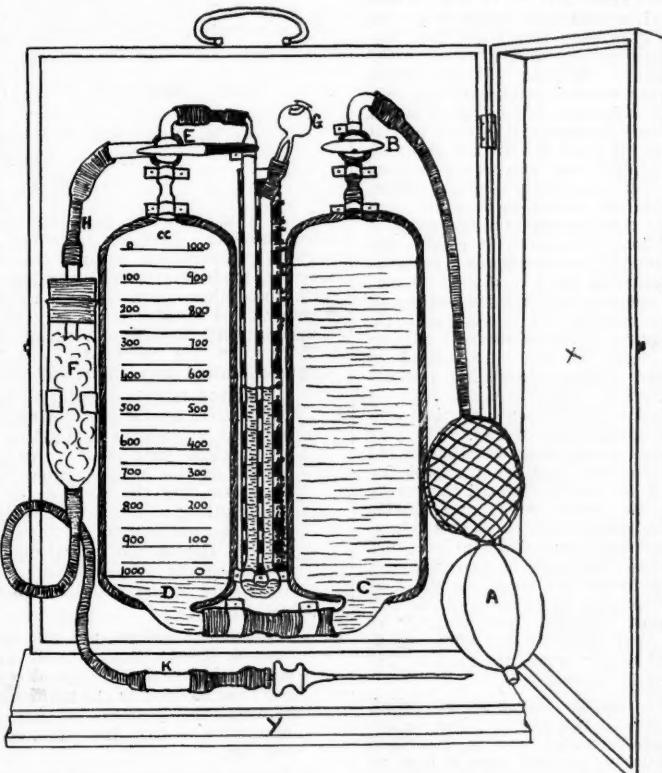
By A. C. F. HALFORD, M.D. (Melbourne), F.R.A.C.S.,  
*Brisbane.*

Two cases of chronic hypertension of the cerebro-spinal fluid by which the tissues within the spinal theca alone were affected, or that a topically low grade of tension was not sufficient to interfere seriously with the cranial end of the nervous system, are reported as distinctly unusual, but possibly not uncommon.

#### Case I.

J.J., a male, aged nine months, was first seen in September, 1925. The child was screaming incessantly and throwing itself about in the mother's arms. It was excessively wasted, rejected all nourishment and was practically sleepless. Up to the age of seven months he was a bonny boy and never failed to attract attention when taken out. With the onset of teething, which was accompanied by severe gingival swelling and ecchymosis, the boy became refractory, cried a lot and began to vomit the breast milk. Sleeplessness and want of nourishment, without any history of acute infection or convulsions, reduced the child to the famine type as when first seen. A placebo was administered with a request that the child be brought again for detailed examination. The parents failed to keep the appointment and took the child elsewhere. The advice of several physicians was sought and it was alleged that the advice they gave was to take the child home and feed it up. This information was proffered on the return of the child by the distracted parents in May, 1926.

Emaciation was extreme and weakness excessive. The only relief the little sufferer and incidentally the parents obtained was by riding in a motor car for most of the night. Some sleep then resulted in the early hours of the morning. Some retraction of the head was observed. The history of continued wasting from vomiting (the child was still breast fed), the wailing and sleeplessness suggested that the condition may have been due to chronic post-basic meningitis of infants.



Consent to perform lumbar puncture was obtained largely through the good offices of an aunt of the baby, who was a very competent nurse and from whom this history was obtained.

Within a few minutes of the withdrawal of ten cubic centimetres of the fluid (under very definite pressure), which was reported as normal by the microbiologist, the child went to sleep for two hours. That night it took nourishment well and slept soundly. Two days later the puncture was repeated. The fluid was no longer under increased pressure.

Although too late to be of much use, twenty cubic centimetres of antinemococcal serum was injected intrathecally. The child was kept under observation, but no evidence of reaccumulation has been since observed. The condition rapidly gave way to robust health, and when last seen, February 7 of this year, the boy, now five and a half years of age, weighs 19.5 kilograms (three stone one and a half pounds) and is 111.25 centimetres (three feet eight and a half inches) in height.

#### CASE II.

The next case is that of B.B., aged twelve years, seen on July 15, 1929. The parents state that up to seven years of age the boy was a normal, exceedingly bright boy. He then contracted measles. (This very important fact was recalled to the memory of his parents only after repeated questioning on successive days. Without it there would have been an important factor wanted to explain the subsequent history.) The acute infection was not severe, but from that time the boy became excessively restless and it is related that he did not sleep until 3 a.m. for eighteen months and after that his nights' rest was badly broken. He became dull and would not play with other children. He developed curious habits of breathing rapidly and noisily and complained of a heavy weight on the nape of his neck, throwing his head back frequently to relieve the pressure. The medical attendant recommended removal of adenoids and tonsillectomy and then a change of air. No improvement followed. He was still very wakeful and distressed on account of his inability to obtain rest. He would often throw the bedding entirely off and sit up chewing his nightclothes. Balls of fluff were found in the bed from long continued rubbing from his restless feet. He became more restless and sleepless, and in August, 1926, he was admitted to a children's hospital and kept under observation for about four weeks. He was discharged without a diagnosis being communicated to his parents, who were advised to take him from school for six months. While in school, he overworked all the recognized excuses for leaving the class room and finally depended upon expressing an urgent desire to spit whenever his uncontrollable restlessness compelled him to resort to these subterfuges. Of course, he made no progress and could not be prevailed upon to do his home work. The school master was indulgent because he considered the boy not vicious, but well behaved, though "possessed." At first his appetite was poor, but later he ate with greed, drinking large quantities of water with his meals. He was constantly leaving the table to spit.

Other medical advice was sought, but without relief, and the distracted parents finally brought the boy to see me. I had in mind the infant whose case is described above, and only a little while before had seen a case of post-measles meningitis. By a strange coincidence I had then just read the story, by Dr. John Brown, of "Pet Marjory," who was the victim at an early age evidently of an acute and fatal form of this disease. I decided, therefore, to do lumbar puncture. It was with the greatest difficulty that the violent resistance of the patient was overcome by the anaesthetic. The fluid was found under considerable pressure and about 30 cubic centimetres were withdrawn. The report of the microbiologist showed that the fluid was normal, which is not surprising considering the length of time since the acute illness. The subsequent history was entirely satisfactory. No evidence of reaccumulation appeared and the boy soon showed marked improvement in his behaviour. He is now spending his second year at boarding school, is the captain of the junior cricket eleven and the head master's report indicates that the lad's place in his class is average. I saw him last

month and would say he is safe from relapse and a very different youth from the hunted little animal he was when first seen.

#### Comment.

These cases illustrate the diagnostic and therapeutic value of lumbar puncture and that the operation may fortunately result in complete cure of chronic hypertension of the cerebro-spinal fluid.

In both cases probably, but more markedly in that of B.B., the pressure resulted in an irritative condition of the lower neurone segment so that normal cerebration was constantly and exasperatingly interrupted and forced to take notice of peripheral reflex stimuli. Without this disturbing influence the higher centres were quite capable of functioning, showing that they had not suffered deterioration as the result of the infection or pressure. It seems reasonable to assume that measles is a very definite primary cause of post-basic meningitis. In my experience it is the commonest.

It is advisable to remember the possibility of the condition described being responsible for restless, unmanageable children who may or may not be vicious, whose demeanour has unaccountably changed after an attack of an acute infection which may have escaped the memory of the parents until persistently questioned.

#### DELAYED PERITONITIS.

By M. P. SUSMAN, M.B., Ch.M. (Sydney),  
F.R.C.S. (England),  
Sydney.

It is a well known fact that an infected wound may, after healing, harbour dormant organisms; should a secondary operation become necessary, these organisms may be made active and virulent; this is especially so with anaerobes, such as the bacilli of tetanus and gas gangrene. A similar state may occur in peritoneal infections, but this is seldom mentioned in surgical literature.

Wilkie, in his recent Murphy Oration, discusses two-stage abdominal operations, and states:

No fixed length of interval between the preliminary and radical operations can be laid down, but each case presents a problem demanding an individual exercise of surgical judgement. Apart altogether from the benefit to the patient from this restorative interval, we know that the mere opening of the abdomen and the handling of the viscera calls forth a reaction which gives the peritoneum an increased resistance to infection at the second operation. The latter deals with a peritoneum prepared and warned; there has been, as it were, a test mobilization of the protective forces.

Jeans writes:

Formerly, when an appendix abscess had been opened, it was thought wise to wait several weeks or months before doing appendectomy. My view is that the time to do it is the moment the abscess has healed, because the patient is then at the height of his immunity to that infection, as proved by the abscess healing.

Is Jeans's view correct and was death in the two following cases due to the long interval between the first and second operations? In Case I the interval was five months, and in Case II six months. Whatever the answer, they do clearly show what a real menace secondary operation may be.

CASE I: A male, aged forty years, was sent to hospital with a diagnosis of debility and anorexia. For seven or eight months he had had several attacks of abdominal pain and diarrhoea and occasional vomiting; he had lost weight. On examining him one noted chiefly his bad teeth, furred tongue, dry and harsh skin and tumid abdomen, with a definite tumour, only slightly tender, just below the navel. His temperature was 37.5° C. (99.6° F.). Operation involved the simple drainage of a thick-walled offensive abscess. The patient recovered quickly and the abscess was healed in six weeks. He returned for

appendicectomy three and a half months after healing of the wound, that is, five months after the first operation. He had been well in the interval, except that a scar hernia had formed. The second operation was easy. The appendix was very swollen and contained offensive faecal matter. No pus was seen and there appeared to be no reason why a good prognosis could not be given. He died the next day after an attack of dyspnoea and pain in the chest and abdomen. Autopsy revealed the presence of general peritonitis. There were dense adhesions in the pelvis, involving the small gut.

CASE II: A female, aged seventeen years, was admitted to hospital on the seventh day of her illness, which consisted of pain in the lower part of the abdomen and vomiting. She had a temperature of 38.9° C. (102° F.) and a pulse rate of 108 a minute. There were found tenderness, rigidity and tumour in the right iliac fossa. At operation I drained an offensive abscess containing some blood, through a McBurney incision. The patient's recovery was slow; she was febrile for eight weeks, and a faecal fistula formed. For the next four months she was well except for occasional attacks of abdominal pain. The bowels acted naturally in spite of the fistula; it was hoped that this would close spontaneously, but it did not. The second operation was done six months after the first. The fistula was found to be a caecal one, and was repaired without difficulty. No pus was found. The site of the fistula was the root of the appendix, the rest of which was missing; it had apparently sloughed away, thus leaving the fistula. The patient rapidly deteriorated after the operation and died on the second day. Her chief post-operative symptom was pain in the chest. At autopsy the wound in the bowel was found to be soundly closed. There were numerous pockets of pus all over the peritoneal cavity. The uterus was adherent to the right side of the pelvis. There was no pulmonary embolism or other chest complication.

#### Discussion.

There are here recorded two cases of fatal peritonitis following operation secondary to drainage of an appendiceal abscess. The questions raised by these and similar cases are: (i) Should appendicectomy always be advised after drainage of an appendiceal abscess, and if so, how soon after the primary operation? Jeans suggests that the best time is immediately after the abscess is healed. If the appendix is left, what are the chances of another attack of appendicitis which, this time, may be fatal? (ii) Can one tell by any means what patients are likely to fare badly at the secondary (deliberate) operation? (iii) Are there any means of preventing such fatalities, for example, by preliminary vaccine treatment and injections of nucleic acid, as advised by Wilkie in cases of excision of the colon or rectum?

#### Bibliography.

D. P. D. Wilkie: "Murphy Oration on Some Principles in Abdominal Surgery," *The Lancet*, October 19, 1929, page 803.

F. Jeans: President's Address: "Urological Statistics as Criterion of Progress," *Proceedings of the Royal Society of Medicine*, November, 1929, page 1.

#### Reviews.

##### GYNÆCOLOGICAL OPERATIONS.

A NEW edition of "Operative Gynæcology," by H. S. Crossen, is welcome, although it is doubtful whether the additional matter is an improvement upon its former excellence.<sup>1</sup> Since its first appearance fifteen years ago thousands of copies must have been sold in Australia and New Zealand, so that obviously it filled a need. The cynic

<sup>1</sup> "Operative Gynecology," by H. S. Crossen, M.D., F.A.C.S., and R. J. Crossen, M.D.; Fourth Edition; 1930. St. Louis: The C. V. Mosby Company; Melbourne: W. Ramsay. Crown 4to., pp. 1078, with 1246 illustrations and two colour plates. Price: 75s. net.

might declare that this popularity arose from the affadance to the occasional surgeon of a hundred and one ways of shortening the round ligaments. However, the truth is that the book, like a Persian rug, possesses "character"—the imprint of lifelong devotion by a skilled and loving craftsman.

The addition of chapters by other writers upon anaesthesia, abdominal surgery, urological surgery and proctology tends to convert the work into a compendium. These chapters, although adequately written, are superfluous for those gynaecologists outside America who do not practise such a wide range of surgery.

The allocation of a hundred pages to the article on the shortening of round ligaments grossly exaggerates the importance of this subject.

In this edition, for the first time, reference is made to the work of the Manchester school on genital prolapse. The reference is inaccurate and quite inadequate. We would recommend the author to read Fothergill's writings more extensively. To condemn the operation as being excessively time-consuming on one exhibition by a visiting Australian surgeon is neither fair to Fothergill nor to Australian surgeons.

The article on vulval carcinoma has been taken verbatim from Taussig and is noticeably brilliant.

The numerical wealth and excellence of the illustrations once again compel our admiration; they alone are sufficient for us to recommend the book to all who are not yet in possession of a copy.

#### PATHOLOGY.

In the preface to his book on the pathology of internal diseases, Dr. William Boyd gives admirable reasons for its publication.<sup>1</sup> The author, acting on the principles of Rokitansky, has not confined himself to the strict limits of morbid anatomy, but has wandered freely into the realms of pathological physiology and medicine. There are eight hundred and thirty-seven pages of letterpress, with two hundred and ninety-eight illustrations and fifty-one pages of index.

Diseases are discussed in their various systems and the correlation of symptoms and pathological findings is particularly well done. This, with the smaller paragraphs on prognosis, is a welcome addition to any text book of pathology and should be of great value to the clinician. Much space is given to certain anatomical and physiological considerations. The bacteriology pertinent to various diseases is included in their respective chapters and is in sufficient detail to satisfy both pathologist and clinician. There are also numerous short paragraphs dealing with methods of investigation and certain laboratory tests.

An interesting section in the chapter on diseases of the heart is that written on *angina pectoris*. The author very strongly favours Albutt's view, namely, that the primary lesion is in the aorta. Our experience has shown us that disease of the coronary arteries is a much more common finding than aortic disease. The paragraphs on heart block are a very welcome addition, as are those on congenital abnormalities of the heart. The section devoted to diseases of the arteries is very complete and should be of value to many who have become confused by the multiplicity of terms in vogue.

In view of the recent pandemic of influenzal pneumonia, the pages devoted to it are of interest, although the author has added nothing new to our knowledge of the subject.

We are disappointed in that there is no mention of hydatid disease of the lung and liver in this book, and assume that the scarcity of the disease and lack of material in Canada has restrained the author from writing on this subject.

In the chapters on nephritis the author admits the great difficulties of nomenclature. He has attempted to simplify

<sup>1</sup> "The Pathology of Internal Diseases," by W. Boyd, M.D., M.R.C.P., Dipl. Psych., F.R.C.S.; 1931. Philadelphia: Lea and Febiger. Royal 8vo., pp. 904, illustrated with 298 engravings. Price: \$10.00 net.

the subject by reverting to an anatomical classification and thus distinguishes the main divisions of Bright's disease—glomerulonephritis, nephrosis and arterioclerotic disease. This is in accord with modern trend of thought and will be pleasing to the physician. The author, like many others, admits that the term nephrosis is responsible for much confusion and has found at autopsy that in many cases diagnosed as nephrosis a typical glomerulonephritis has been present. He finds a pure lipid nephrosis to be extremely rare.

The chapters devoted to the thyroid gland are very complete and the subject of goitre is given a large amount of space. To the author the key to the goitre problem is to be found in the processes of hyperplasia and involution, and therefore in a sense physiological. The author admits that the present method of classifying goitre is far from satisfactory.

The section on diseases of the blood, including as it does the work of Florence Sabin and her associates on blood formation, is well done and very complete.

The section on diseases of the nervous system is very full and exceptionally good. A large amount of space is devoted to structure and function. The chapters on epidemic encephalitis and acute anterior poliomyelitis have a particular interest. That rare and only recently recognized disease, *encephalitis periaxialis diffusa* of Schilder, has received due attention. For a book of this size tumours of the brain, spinal cord and meninges are fully described, with particular reference to Cushing and Bailey's writings.

The book is an excellent companion to Dr. Boyd's "Surgical Pathology." Many diseases are not mentioned in detail and for these the reader is referred to the companion volume. This particularly applies to a large number of tumours and diseases of a surgical nature.

The volume is easy to read and convincing in tone. There is evidence that the author has read widely in many matters which are strictly outside the realms of pathology. The references are numerous, very well selected and in every example modern. The illustrations are exceedingly good and the photomicrographs are extremely well reproduced.

The book is one to be thoroughly recommended and is a valuable addition to the text books on pathology.

#### GYNÆCOLOGICAL DIAGNOSIS.

In the preface to "Abdomino-Pelvic Diagnosis in Women," A. J. Walschied writes: "This work is intended primarily for the post-graduate student and general practitioner, although the undergraduate should find it of use for reference and collateral reading."

Apart from the dubious value to undergraduates of collateral reading, those of Australian schools will obtain little assistance in their curriculum from this book. Doubtless, however, the post-graduate will find much to interest him in this philosophical presentation of various gynaecological topics from what the author is pleased to describe as an anthropological standpoint.

The title is a misnomer, since the discussion of practical diagnosis, as we understand it, occupies no more than one hundred pages, whereas the remainder is a promiscuous assemblage of anatomical and pathological data, often without obvious relevancy. The key to Dr. Walschied's admitted heterodoxy is found in the preface, wherein it is stated that the object of the book is the teaching of "disturbed structure and disturbed function . . . ; from these we deduce our subjective and objective symptoms."

For those of us, therefore, who look upon diagnosis ( $\delta\alpha =$  through,  $\gamma\iota\gamma\nu\omega\kappa =$  I discern) as the process of discerning through symptomatology the nature of a particular infirmity, the book is unsatisfying and unpractical. Differential diagnosis is deliberately omitted.

The general arrangement of the book is in two parts. Part I deals with general gynaecology and has chapters

upon anthropometry, aetiological factors, general symptomatology, gynaecological examination and diagnosis. Part II deals with special gynaecology containing chapters arranged on a regional basis. A bibliography of approximately one hundred and fifty references and a good index complete the work.

The author lays undue emphasis upon the newer and special diagnostic procedures, thereby laying himself open to the suspicion of a fondness for "stunting." For example, it is stated on page 725, in discussing diseases of the tubes, that "the first step toward diagnosis at the Broad Street and Pan-American Hospitals is a standing order for the sedimentation test and blood count."

As an example of many of the details at which one might reasonably cavil is the following statement on page 727: "In suspicion of tuberculosis of the tubes the *portio* and *cavum uteri* should be examined for lesions."

Despite these criticisms and the tiresomeness of the "American" phraseology, there is much of interest in the text.

#### SPLENIC DISORDERS.

IN "The Mycoses of the Spleen" A. G. Gibson elaborates the thesis that splenic anaemia, acholuric jaundice and "a group of cases with cirrhosis of the liver provisionally named Banti's disease" have a common aetiology. The infecting organism, he maintains, is mycotic, belonging to the genus *Nocardia*, and is to be found in the Gandy-Gamma nodules which are so often present in the spleens of patients suffering from these diseases.

The first chapter of the book is devoted to a wide survey of our knowledge of disorders of the spleen; it is of great general interest. Its special purpose is, however, to justify the author's contention that splenic anaemia, Banti's disease and acholuric jaundice are all to be classed as inflammatory diseases of the spleen and that they may well have a common aetiology. There will be general agreement that the lesions in the spleen in the two first named are inflammatory. To group with them acholuric jaundice requires a degree of special pleading which, in our opinion, greatly weakens the author's argument. For example, no adequate explanation is offered of the fact that increased corpuscular fragility is an essential feature of acholuric jaundice and one which, in the vast majority of cases, clearly differentiates it from splenic anaemia. The point does receive mention, but its significance is evaded by the somewhat misleading statement that "in the acquired disease and a proportion of the congenital cases the fragility is normal." The much closer resemblance between acholuric jaundice and pernicious anaemia receives no mention, possibly, we suspect, because current theories of the aetiology of pernicious anaemia cannot be harmonized with the author's argument.

The second chapter is devoted to the clinical and pathological data of the cases studied.

Then follows a discussion of the histological and bacteriological evidence on which the claim to specificity of the *Nocardia splenica* is based. This section is marked by great fairness and restraint. The author points out that his findings and their interpretation are not accepted by the large majority of British and American workers. His attempt to meet their criticisms is, however, not convincing and on the evidence submitted a verdict of "not proven" must be given.

Finally, the development of the mycotic theory is traced and the work of French observers, who would incriminate a similar, though not identical, organism, is reviewed. An excellent bibliography is appended.

In spite of the criticisms we have offered, this is a book which should be read by everyone interested in splenic disorders. While the author's arguments are not, in our opinion, convincing, they have for a number of years been provocative of much constructive thought, and their presentation in a concise but complete form will stimulate further investigation in diseases of the spleen.

<sup>1</sup> "Abdomino-Pelvic Diagnosis in Women," by A. J. Walschied, M.D.; 1931. St. Louis: The C. V. Mosby Company; Melbourne: J. Ramsay. Crown 4to., pp. 1023, with 397 illustrations and one colour plate. Price: 70s. net.

"The Mycoses of the Spleen," by Alexander George Gibson, M.D., F.R.C.P.; 1930. London: Kegan Paul, Trench, Trubner and Company, Limited; Melbourne: W. Ramsay. Demy 8vo., pp. 182. Price: 12s. 6d. net.

## The Medical Journal of Australia

SATURDAY, JULY 25, 1931.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

### THE STATUS LYMPHATICUS.

For very many years it was known that enlargement of the thymus gland is often the most striking pathological finding when sudden death has occurred from apparently insufficient causes. There is a record of such an observation in 1614. In 1830 Kopp suggested that laryngospasm was a true thymic asthma due to pressure of the enlarged thymus on the trachea, great vessels and autonomic nerve trunks. Friedleben in 1858 maintained that pressure of an enlarged thymus could not explain Kopp's *asthma thymicum*, but it was not till 1889 that the term *status lymphaticus* was introduced by Arnold Paltauf. He advanced the view that thymus death is due to a lowered resistance, dependent on a specific constitutional anomaly of a lymphatic chlorotic type which so weakens the influence of the nervous system that persons with this anomaly were unable to withstand shocks or injuries that would not have seriously affected normal persons. The anatomical changes were to him only the gross manifestations of a nutritional defect or anomaly. These views were accepted by many observers, but there have always been some who have stoutly denied the existence of a *status lymphaticus*. Most text books have contained

descriptions of a *status lymphaticus*. In Albutt and Rolleston's "System of Medicine" a whole chapter is given to the discussion of the condition, but it is stated that it is "still regarded with doubt in some quarters."

The existence of a *status lymphaticus* is a convenient and happy explanation for unexpected fatalities, especially when the fatalities follow administration of an anaesthetic and are the subject of a coronial inquiry. It is quite possible that a diagnosis of *status lymphaticus* has often been made on incomplete evidence in these circumstances. In any case it is obvious that the conception of *status lymphaticus* was based partly on observed anatomical facts and partly on hypothesis. A diagnosis of *status lymphaticus* was not justifiable merely because a thymus, presumably larger than it should be, was discovered. The need for some definite determination on this matter was recognized by the Medical Research Council of Great Britain in 1926. In conjunction with the Pathological Society of Great Britain, the Council organized a collective investigation. A committee was appointed and investigators in large centres of population were allotted the task of collecting records. An analysis of the data has been made and published by Dr. Matthew Young and Professor H. M. Turnbull in the March, 1931, issue of *The Journal of Pathology and Bacteriology*. The special objects of the investigation were: (i) to establish by means of a large series of weights and measurements the standards of weight for age and proportion to body weight of the normal thymus at all ages, and (ii) to investigate closely the precise cause of death in persons dying suddenly from unexplained or trivial causes when the only apparent abnormality was the presence of a large thymus. The general conclusion of the Committee is that there is no evidence that so-called *status lymphaticus* has any existence as a pathological entity. Medical practitioners who are specially interested in pathological investigations, will, of course, study the analysis of the records. In this place it is possible merely to indicate the main features. The average weights of the normal thymus for the several ages for one year upwards and the mean percentage proportions of thymic weight to

body weight in the different age groups from one year onwards may be considered to be definitely established. The figures for ages to one year exceeded the corresponding values based on published data from the London Hospital, but the data were not numerically adequate to warrant any emphasis being laid on the differences observed. There was no evidence that acute diseases of short duration (under three days) reduced the average weight of the thymus to an appreciable degree. An abnormally large thymus in itself cannot be considered indicative of *status thymico-lymphaticus* when no obvious cause of death is found *post mortem*. The deaths are analysed and many are discussed in detail. In the only case in which it was thought that *status lymphaticus* was responsible for death, the thymus was not significantly large. "Encirclement of the trachea" by the thymus is comparatively rare in occurrence and is not necessarily associated with a thymus exceeding the average weight. In the normal group (cases of sudden death in apparently healthy persons) there appeared to be little, if any, association between the weight of the thymus and the amount of lymphoid tissue in the various parts of the body. There was no definite evidence of any concomitant general hyperplasia of lymphoid structures when an abnormally large thymus was present. The amounts of lymphoid tissue in the several parts of the body showed practically no association with one another to which any significance could be attached. In the presence of Graves's disease there was evidence that the average gross weight of the thymus was distinctly above the normal. There was no evidence of an association between arterial hypoplasia and an abnormally large thymus.

Although the number of cases investigated was limited to 680, and although right through the published analysis continual reference is made to the relatively small data and so forth, it would appear that the death blow has been given to the belief in the existence of a *status lymphaticus*. The members of the committee are known to be possessed of sound judgement, and Professor Turnbull, who examined the available material, is so highly esteemed as a pathologist that it would be difficult

to arrive at any other conclusion, even if the result of the investigation did not bear the *imprimatur* of the Medical Research Council. The onus must rest on those who believe in a *status lymphaticus*, if there still are such people, to prove its existence. At the same time, while it is an easy matter to say dogmatically that no *status lymphaticus* exists, and to quote this investigation as an authority, no sudden death should be unexplained. More accurate and comprehensive clinical investigation and the wider adoption of *post mortem* examinations are the key to many a riddle of this kind.

## Current Comment.

### THE RELATION OF FOCAL INFECTION TO DISEASE.

SINCE radiographical examination of teeth has been perfected and apical sepsis established, the multitude of teeth extracted in an effort to cure or ameliorate the various "rheumatic" disorders, neuritis and myocarditis has been colossal. So, too, with tonsils; the number removed or destroyed to combat systemic disease has assumed gigantic proportions. The fact that streptococci have been found on these unhappy structures has been taken as a reason for removing them from the patient with utter disregard for the purpose Nature intended them to fulfil. Also, but to a less extent, the gall bladder has been drained or ablated. Though much good has been done, it is unfortunately true that many thousands of the suffering public have been in no way benefited and the theory of focal infection as a cause of disease is in danger of becoming discredited by the public, who have a right to expect beneficial results from such procedures. The physical and mental misery of a patient suddenly armed with artificial dentures can be understood only by those compelled to wear them. Indigestion may be no more comfortable than "rheumatism." G. C. Hale<sup>1</sup> states that a focus of infection may be present, but not the cause of the disease of which the patient complains. Or the focus of infection may be the cause and yet be removed too late to benefit the firmly seated disease. Also many neurotic people with a hypersensitive sympathetic nervous system complain of symptoms having no organic origin and which disappear quickly, but only temporarily after teeth extraction or tonsillectomy. He holds that these facts have been overlooked by the medical profession. He pleads for the use of a little common sense as "valuable seasoning" in dealing with the problem of focal sepsis. He draws a distinction between such minor matters as removal of tonsils, removal of one or two suspected teeth and prostatic massage on the one hand, and

<sup>1</sup> *The Canadian Medical Association Journal*, April, 1931.

the wholesale sacrifice of sound-looking teeth, excavation of accessory sinuses and removal of gall bladders on the other. The former he would advise freely, but before the latter are undertaken he thinks that every possible attempt to gain relief should be made. Relief to him is relative, and a sufferer from asthma who is relieved of his paroxysms by radical sinus surgery may not worry about subsequent nasal discomfort.

Hale discusses in detail the teeth as sites of focal sepsis. He points out that bacteria are constantly present in the mouth and, in spite of the tooth brush and dentifrices, teeth are often infected. The gingival epithelium is delicate and easily broken. Dental infection may be evident to the trained observer, as in caries and gingival disease. Or it may be only recognized by X ray examination or by inference. X rays may not reveal apical absorption of a root, and apical absorption does not necessarily indicate true infection. By inference is meant the probability of infection of a devitalized tooth. Dental infection is usually streptococcal, but systemic disturbance may result from the carriage by the blood of toxins and not organisms themselves from the infected tooth. These toxins may cause an anaphylactic reaction on the part of certain tissues, which will exhibit a picture comparable to that produced by other anaphylactic reactions. Family history, in Hale's opinion, is important. Dental infection may not remain a local process, and a patient with mild infection may, from a breakdown in general health due to overwork, worry or undernutrition, suddenly develop evidence of a spread of the condition. In these cases rather than extract the teeth Hale thinks that it may be better to try to build up the general health first in order to prevent the spread of dental infection. X rays are not an infallible guide to the necessity of tooth extraction, but they will show if a tooth is devitalized and if there is condensation of bone around the rarefied area at any tooth apex. A dead tooth acts as a foreign body, and devitalized teeth are infected in 75% of cases. Condensing osteitis indicates poor defence. Hale states that X ray pictures should be taken to ascertain the number and appearance of devitalized teeth and evidence of bone condensation. In the first instance only one tooth should be extracted for examination and bacteriological investigation. Then should be considered the patient's age, his family history, the type of systemic infection feared and the probable dangers of the condition if left unchecked before wholesale extractions are decided upon.

Turning his attention to the tonsil, Hale states that their loss is not so serious as the loss of teeth. After the first few years of life the tonsil, which consists of lymphatic tissue, is potentially infected. The occurrence of leucocytosis and increase of systemic disturbance after tonsillar massage show that this infection has direct access to the blood stream. Every act of swallowing involves moderate tonsillar massage; accordingly, the entry of streptococci into the blood must be easy and even

unavoidable. The exact function of the tonsil on the growth or on the endocrine system of the growing child is not known; nor is its rôle as a barrier to infection quite simple. If the patient suffers frequently from colds or sore throats or has systemic disease which might be due to infected tonsils or if the tonsils look unhealthy, they should, in Hale's opinion, be removed, as they also should if there be a history of frequent attacks of sore throat, but no local signs. In such circumstances the tonsils may be fibrous with closed crypts and the only drainage exit may be through the systemic circulation.

While it is possible to follow this writer most of the way, he seems to strain the case unduly when he states that tonsils should be removed in the presence of systemic disease which might be due to tonsillar infection. Surely the matter is capable of decision as to whether they are infected or not. Further, the work of the Mellanbys on the anti-infective vitamin should surely call a halt to the enormous amount of surgical interference at the present day. Extracting teeth or removing tonsils may be beginning from the wrong end. The infection may be solely the result of dietary deficiency and an abundant supply of food containing vitamin A, by preventing infection, may render unnecessary wholesale teeth extractions or removal of tonsils. Not one reference is made to vitamins in Hale's article. Probably a diet containing an abundance of butter, cream or even raw carrots would obviate much focal infection. Even in the adult it is possible that the tonsil performs some useful function and the mere finding of streptococci on its surface does not necessarily indicate its infection.

#### TUBERCULOSIS OF THE STOMACH.

R. W. Good has made a study of recently reviewed cases of tuberculosis of the stomach.<sup>1</sup> This condition is found but rarely in adults. Half the cases are associated with tuberculosis in other parts of the body. The disease is mistaken for gastric ulcer or carcinoma. Tuberculous changes have been found in association with carcinoma of the stomach. Treatment is essentially surgical and in Good's opinion radical resection of the lesion-bearing area is the most suitable procedure. He reports two cases. One was an example of primary tuberculosis of the stomach—the type most suitable for operation. The other was characterized by evidence of tuberculosis elsewhere in the body. The history in each instance was that of gastric ulcer and there was no difficulty in establishing the presence of a gastric lesion. Good points out that if surgical treatment is prescribed for all chronic gastric lesions, the occurrence of tuberculosis of the stomach does not create a new problem. Evidence of tuberculosis in other organs does not contraindicate exploration of a gastric lesion.

<sup>1</sup> Archives of Surgery, March, 1931.

## Abstracts from Current Medical Literature.

### MEDICINE.

#### Anuria.

H. STEINITZ (*Klinische Wochenschrift*, September 13, 1930) reports a case of recurrent genital carcinoma in a woman, aged fifty-seven, in whom complete anuria existed for twenty-four days before death. A search of the literature shows records of nineteen similar cases. Careful observation of the patient was made and numerous biochemical tests were performed. The chief symptom was severe vomiting, which ended only on the last day. During the first three weeks the motions were small in amount and at the end became very loose and watery. Insomnia was pronounced in the latter stages, the mental faculties remained clear and no fits occurred. Blood examination revealed retention of indican as well as calcium and phosphates and a marked diminution in chlorides. Examination of the stomach contents revealed an increased output of nitrogenous substances. In this way the stomach apparently acted as an excretory organ for the kidneys and this probably was the cause of the continuous vomiting. The biochemical findings are given in detail.

#### Anæmia in Renal Disease.

E. BECHER (*Münchener Medizinische Wochenschrift*, September 26, 1930) states that the pallor of renal disease is due to a true anæmia and not to an angiospasm of the skin. Renal anæmia shows the characteristics of a secondary anæmia with low colour index and may be present in varying degrees of intensity. A moderate degree of anæmia with a haemoglobin content of 70% is seen in cases of renal insufficiency and is due to hæmaturia or the second stage of glomerulonephritis. It may also be due to disturbances of the blood-forming organs. In cases of hydræmia a relative degree of anæmia exists and is due either to intravascular retention of water or to the absorption of water into the blood stream from the edematous tissues. Patients with anuria also manifest anæmia due to the entrance of urea substances into the blood stream from the connective tissues. Pronounced anæmia with a haemoglobin count of 50% is generally caused by the retention of the end products of intestinal decomposition in the urine and connective tissues.

#### Differential Diagnosis of Cholera and Food Poisoning.

J. WALKER TOMB (*Indian Medical Gazette*, September, 1930) discusses the differential diagnosis of cholera and food poisoning. Fatal cholera occurring among European communities is often euphemistically designated "ptomaine poisoning." The author condemns the use of the term "ptomaine poisoning," as food poison-

ing is not as a rule due to the ptomaines contained in decomposed food, but to bacterial infection. Infected food does not differ from uninfected food either in taste or smell. In India the prevailing conditions prohibit the possibility of differential diagnosis between cholera and food poisoning by bacteriological methods, save in few instances. It is therefore necessary to study the clinical manifestations of the two infections. In the majority of instances the onset of cholera is accompanied by neither pain nor nausea; nor is there usually physical discomfort of any kind apart from the diarrhoea. The stools are at first fecal, then of the type usually termed "rice water." With the onset of watery diarrhoea vomiting commences, but there is no nausea. The vomiting becomes projectile in character and great quantities of fluid are sometimes lost. Acute abdominal pain is rare; it is apt to be associated with pink-stained stools, which are a good prognostic omen. Cramps, suppression of urine, coldness, shrivelling of the features may occur. The clinical features of food poisoning are strikingly different. The attack usually begins with acute abdominal pain, headache and pyrexia. Violent vomiting, diarrhoea and tenesmus supervene. The stools, though watery, remain faecal. There is never any collapse due to loss of fluid, though there may be faintness and weakness as a result of the toxæmia. Suppression of urine never occurs. The author concludes his paper with a table setting out the main features of the two infections.

#### Exophthalmic Goitre.

W. O. THOMPSON AND P. K. THOMPSON (*Endocrinology*, November-December, 1930) describe observations on the iodine reaction in exophthalmic goitre. Small doses of iodine, six milligrammes (roughly one drop of the compound solution) or less, were administered daily. A reduction in basal metabolism was noted in most cases with these doses, and the reduction was as great when six milligrammes were given as when 126 milligrammes (one cubic centimetre of the compound solution) were administered per day. The usual doses of the compound solution used in treatment of exophthalmic goitre are 30 to 45 minims daily, 250 to 375 milligrammes of iodine. Six milligrammes of iodine per day represents thirty-five times as much as is broken down in the form of thyroxin each day by the normal gland. However, some patients do not respond to the very small doses, such as six milligrammes per day, and it may be necessary to give up to thirty milligrammes (five drops of the compound solution) per day to obtain a satisfactory reduction of basal metabolism. Some patients do not respond to iodine treatment at first, and others become refractory after prolonged administration; that is to say, their nervous symptoms again become more obvious.

In these circumstances operation should be postponed and iodine treatment deferred for four weeks with the patient at rest in bed. This routine should be adopted if the nervous symptoms increase or the basal metabolism rises while iodine is being used. In mild cases good results follow prolonged iodine treatment as a rule; in severe cases the results are poor. When thyrotoxic symptoms persist after partial thyroideectomy, prolonged administration of iodine helps to maintain a low basal metabolism. In some cases iodine induces myxedema when administered after partial thyroideectomy has been performed; omitting iodine or adding thyroid to the diet corrects this abnormality.

#### Obesity.

H. BERNHARDT (*Endocrinology*, July-August, 1930) discusses the relationship of obesity to metabolism. Basal metabolism estimations are not a sound basis for judging metabolism as a whole. It has been shown that the metabolic rate can be lower at night or after mild exercise than in the morning, and it is at this time the basal metabolic rate is usually estimated. Obese people whose basal rate is normal, might therefore have periods during the twenty-four hours during which the metabolic rate is lower than the average. This factor plays a considerable part in obesity. Excessive water intake is a factor in obesity, and treatment must always include a reduction of the fluid intake to one thousand cubic centimetres or less per day. In order to reduce the retention of fluid the salt intake must be not more than six to eight grammes per day. The diet should include 0.8 to 1.0 grammes of protein per kilogram body weight and the ketogenic-antiketogenic ratio should be about 1.5 to 1.0. Anterior pituitary substance should be given in large doses, three to eight tablets per day, or one cubic centimetre subcutaneously per day, and thyroid gland in small doses every day or second day. Mild muscular exercise is indicated. Bernhardt considers that there is a control mechanism in the nervous system for regulating metabolism; it is situated at the base of the brain, in the hypothalamus, somewhat behind the *tuber cinereum*; this is very close to the pituitary body and it is to be noted that Biedl pointed out that the hypophysis functionally forms a physiological unity with these centres. Hence the reason for treatment with pituitary gland substance.

#### The Sedimentation Test in Jaundice due to Diseases of Liver and Biliary Apparatus.

O. SCHLESINGER (*Münchener Medizinische Wochenschrift*, March 13, 1931) reports the rate of the sedimentation of the red blood corpuscles as affected by the presence of bile acids in the blood. Speaking generally, bile salts cause a slowing of the rate of sedimentation. Various factors, however, such as constitutional variations in

patient, affection of the intestinal tract and inflammatory processes in liver or biliary apparatus lead to a rapid sedimentation in some cases and a slow rate in others. Admitting these variations, however, it can reasonably be concluded that an extremely rapid sedimentation of the red corpuscles points to an inflammatory process, a very slow rate to a more purely mechanical cause of the jaundice, while a moderately long sedimentation time suggests a hypofunction of the liver. After a consideration of the various forms of liver and biliary disease complicated by jaundice, the author concludes that as a diagnostic and prognostic aid the sedimentation rate must be taken in line with other methods of investigation. When so used, it will give a deeper insight into the pathological picture, enable diagnosis to be made more quickly and with greater certainty, and occasionally be of value in prognosis. A very slow sedimentation rate in a catarrhal jaundice points to the mechanical cause of the latter. A rapid sedimentation in general indicates a definite inflammatory process. The same holds for cholelithiasis and cholecystitis. In the case of malignant disease and jaundice in which the tumour cannot be demonstrated clinically, the author claims the sedimentation test as an extraordinarily valuable and reliable help to diagnosis.

#### Criteria of Arrest in Pulmonary Tuberculosis.

LEON BERNARD (*La Presse Médicale*, January 14, 1931) discusses the clinical and anatomical evidence which warrants a diagnosis of arrested disease in pulmonary tuberculosis. There are many patients in whom there occurs a transient episode, notably haemoptysis "from the blue." There is no aftermath, and spontaneous arrest follows. In chronic progressive tuberculosis of caseous or fibro-caseous type alternating activity and quiescence is the rule, and arrest rarely results. In actual fibroid phthisis, though the patient will probably live longer, he has even less chance of being "clinically cured." The author recognizes in miliary tuberculosis a chronic form in which the lesion is stationary, and a form in which the lesion entirely disappears. In these types it is justifiable to speak of arrest. Pneumonic tuberculosis also may undergo complete resolution. Anatomically arrest may be accomplished in one of two ways, either by resolution or fibrosis. The former is essentially found in recent lesions, and the process is similar to that seen in pneumonia. Resolution is manifested by the disappearance of physical signs and radiological evidence. Fibrosis which may or may not be accompanied by calcification, presents a very variable picture. Linear scars or dense opacities may be seen on the skogram and there may be retraction of mediastinum and trachea, even to complete dextrocardia. Cavities, the author points

out, can disappear completely, recent ones by resolution and retraction, older ones by fibrosis and perhaps some compensatory emphysema. The author admits that there is no such thing as absolute cure, the bacillus persisting in the organism throughout life. In criteria of arrest he demands complete stabilization of the patient, the absence of fever and of bacilli from sputum if the latter are present. Also he must be able to return to work without any ill effects. The term "clinical cure" he reserves for those whose disease has remained arrested for three years. There are no absolute criteria of arrest, and great caution is required before pronouncing the disease arrested. In the last resort the physician must act in accord with his own experience and not by rule of thumb.

#### Effect of Pituitary Extract on the Large Bowel.

A. OPPENHEIMER (*Deutsche Medizinische Wochenschrift*, March 27, 1931) has studied the effect of injections of the posterior lobe of the pituitary gland on the large intestine in adults. From radiological examination of six thousand cases he states that the normal mechanism is as follows. Two hours after ingestion of a meal food may be seen passing into the caecum. From six to eight hours are taken in mixing the contents and passing them as far as the splenic flexure. When this point is reached the intestinal contents remain *in situ* for ten hours. The transverse colon is noted to be hanging relaxed while the food is being well churned in the lumen of the bowel. Approximately twenty hours after the ingestion of food rapid colonic movements are noted. The transverse colon straightens out and becomes contracted, and the contents are forced into the descending colon. Following an injection of pituitary extract a similar contraction of the transverse colon is noted, whether it be full or already emptied by normal peristalsis. The tone of the whole large intestine is also greatly raised by the injection, but no special increase in peristalsis of the descending colon was noted. From various experiments the chlorette content of the pituitary extract was not considered to have any effect on peristalsis.

#### Insulin Resistance in Diabetes.

W. FALTA AND R. BOLLER (*Klinische Wochenschrift*, March 7, 1931) consider that extended use of insulin in the treatment of diabetes shows that the belief that diabetes is due to an affection of the insular part of the pancreas is incorrect in many cases. Cases may be divided into two groups: (a) those in which insulin gives full compensation and in which the islets of Langerhans are probably the cause of the condition; (b) those more or less resistant to insulin treatment. In one group of this class larger doses of insulin are required and when the dosage is decreased sugar reappears,

to be followed by symptoms of hypoglycæmia when the insulin is increased. This type of resistance to insulin is often associated with infective processes elsewhere in the body, although this is not essential. The difference between hyperglycæmia and hypoglycæmia is not pronounced. In a second type of resistance the characteristic is the high insulin intake, which does not lead to hypoglycæmia. The abrupt withdrawal of insulin is not followed by the return of sugar in the urine to any degree and the substitution of increased doses is not accompanied by hypoglycæmia. Therefore, the difference between hyperglycæmia and hypoglycæmia is marked. With both forms the blood sugar curve after injection of insulin shows a prolongation of the curve to a greater extent than in cases of insular degeneration. After an investigation of seventy-four cases the authors noted that only thirteen were apparently associated with defects in the islets of Langerhans; fifty-two were of the first type of insulin-resistant group and nine of the second. These resistant cases were noted more among elderly patients, especially when adiposity and vascular hypertension were prominent.

#### Boeck's Disease.

J. MICHELSEN (*Deutsche Medizinische Wochenschrift*, April 3, 1931) describes in detail a case of Boeck's disease—an atypical tuberculous lesion affecting the skin, mucous surfaces, lungs and lymphatic apparatus as well as the kidneys, joints and eyes in some instances. Some authors consider it to be a chronic infective granuloma. Boeck thought that the condition was a variety of pseudo-leucæmia, but tubercle bacilli were found in the nasal secretions, and further investigations proved the tuberculous origin. In all affected regions non-caseating miliary nodules are found associated with giant cell hyperplasia and hyaline degeneration. Radiological examination of the lungs reveals strands throughout the tissues with indurated foci scattered between them. The progress of the disease is slow and the prognosis relatively good. The author is experimenting with radiotherapy in an attempt to dissolve the sclerotic areas in the skin and lungs.

#### Hepatic Function in Syphilis.

K. ZIELER (*Deutsche Medizinische Wochenschrift*, March 6, 1931) has investigated the effect of specific treatment on liver function in a series of ninety-seven cases of syphilis. He strongly advises the estimation of hepatic efficiency during the course of treatment. The best test for the private practitioner is that for urobilinogen in the urine. A positive reaction, especially during treatment, is a sure sign that the liver is involved. The estimation of bilirubin in the blood requires elaborate technique and is suitable only for laboratory investigation. Estimation of the blood sugar curve is of value in all cases.

## Special Articles on Diagnosis.

(Contributed by Request.)

LIV.

### EXTRAUTERINE PREGNANCY.

**ECTOPIC** or extrauterine pregnancy is not an uncommon condition and occurs when the fertilized ovum becomes embedded and develops outside the normal uterine cavity. In almost every case this occurs in the Fallopian tube, hence the familiar term tubal pregnancy.

Some abnormality on the part of the ovum or of the tube interferes with the normal downward passage of the fertilized ovum through the tube, so that it becomes embedded at or near the fimbriated end; most commonly in the ampulla, the wide wavy portion which comprises the greater part of the tube; in the isthmus or straight narrow portion; and, lastly, probably in less than 3% of cases, in the interstitial portion which lies in the uterine cornu.

The fate of the ovum will vary with its situation in the tube; occasionally it may escape through the tubal wall or from the fimbriated end out into the abdominal cavity and there continue to develop as a secondary abdominal pregnancy, which may go to term; such a full time extrauterine pregnancy is rare, and the writer has only seen one case.

The occurrence of a primary abdominal pregnancy, with the embedding of the ovum primarily in any tissue other than uterus, tube or ovary, has not been definitely proved. An ovarian pregnancy in which the fertilized ovum remains in its ruptured Graafian follicle and there becomes embedded, has been reported in about fifty cases.

However, ectopic pregnancy is sufficiently common to furnish the most frequent type of emergency operation in gynaecological practice. During the past two years 124 women were admitted into the Women's Hospital, Melbourne, and were operated upon for extrauterine pregnancy. In England the number of deaths occurring in 1926 from pregnancy and child-birth were 2,860; 94 were due to ectopic gestation. Therefore extrauterine pregnancy is one of the conditions that should always be borne in mind by the practitioner who is dealing with any unusual symptoms complicating early pregnancy. If ectopic pregnancy is thought of, it will not often be overlooked. The object of this article therefore is to try to help in the understanding and diagnosis of ectopic pregnancy.

#### Modes of Termination of Tubal Pregnancy.

Tubal pregnancy may terminate in several ways.

**Formation of a Tubal Mole.** As the ovum develops in the tube, the eroding action of the trophoblastic cells of the ovum causes a slow haemorrhage around the ovum and its death; a tubal mole is thus formed, about the size of a bantam's egg, consisting of blood clot, in the centre of which is the dead ovum. In the majority of cases this is absorbed and the patient returns to her usual state of health. Occasionally at operation a more or less recent tubal mole may unexpectedly be seen.

**Tubal Abortion.** Tubal abortion occurs when the ovum is expelled through the tubal ostium into the peritoneal cavity. It is anatomically impossible, even in an interstitial pregnancy, for it to be extruded into the uterine cavity. Tubal abortion occurs early and there is some bleeding into the peritoneal cavity, with recurrent attacks of abdominal pain and faintness.

**Tubal Erosion.** When the eroding action of the trophoblast causes a small breach of surface in the peritoneal coat of the tube, blood leaks slowly out and clots on the tube and on the posterior surface of the broad ligament. The symptoms and signs are similar to those of tubal abortion.

**Tubal Rupture.** Tubal rupture is not caused by the growing ovum becoming too bulky for the enveloping tube, but again by the destructive action of the trophoblast.

The bleeding is sometimes severe, because the ovum has not been converted into a mole, but is still alive. There may have been some warning beforehand, as slight attacks of pain, uneasiness and pelvic discomfort; but a peritoneal flooding with blood may occur with dramatic suddenness.

**Secondary Abdominal Pregnancy.** Occasionally after tubal abortion or rupture the ovum may survive and go on developing as a secondary abdominal pregnancy, which may proceed to term, a very rare occurrence; but more commonly after some weeks or months a further rupture occurs with internal bleeding and death of the ovum.

#### General Remarks.

Extrauterine pregnancy occurs in women at any age during the fertile period; in our series the youngest was eighteen and the oldest forty-eight years of age. Rather frequently it is met with in parous women several years after the last pregnancy; more rarely a tubal gestation may be the first conception, which may be followed later by normal pregnancies. Rarely, too, it can occur during the period of amenorrhoea, whilst the last baby is still on the breast. Consequently in no class of patient are a systematic history and a routine examination more important.

#### Symptoms and Signs of Extrauterine Pregnancy.

The symptoms and signs of extrauterine pregnancy are amenorrhoea and pain, bleeding from the uterus, passage of a decidua cast of the uterus, tumour in the pelvis and enlargement of the uterus.

**Amenorrhoea.** Usually one period is missed, the patient being two or three weeks "over time." If the ectopic gestation continues, then some of the signs and symptoms of pregnancy are noticed; but generally this abnormal pregnancy ends during the first month or six weeks before these signs can develop.

**Pain.** Pain is an outstanding feature, and recurrent attacks of colicky pain are typical.

**Bleeding from the Uterus.** This blood does not flow from the tube itself, but comes from the uterine endometrium, when the ectopic pregnancy is disturbed. It is usually small in amount, less even than an ordinary menstrual flow, which is of diagnostic significance and usually distinguishes it from the bleeding of uterine abortion. The blood lost is also dark brown, like coffee grounds. This continues until the ovum and the blood shed around it are removed by operation or by absorption.

**Decidua Cast from the Uterus.** The uterine endometrium undergoes a decidua change as in normal pregnancy. Soon after the death of the ectopic ovum this decidua is expelled from the uterus either as a complete cast or piecemeal; usually it is too decomposed for microscopical examination, but if not, chorionic villi and chorionic epithelium will not be found. On the other hand, such chorionic structures can be demonstrated in uterine abortion.

**Tumour in the Pelvis.** In tubal pregnancy, before any intraabdominal bleeding has occurred, a tender, rounded, movable swelling is felt to one side of the uterus and sometimes behind. In one of my patients the ectopic mass was found lying in front of the uterus and upon the bladder, a most unusual position. Whilst separating the mass, a manoeuvre which should always be done very gently, one's finger slid easily and without resistance into the bladder. This was repaired and healing followed without any untoward symptom. As blood leaks out into the peritoneal cavity, the tubal swelling becomes larger and more fixed. If the effused blood has collected in Douglas's pouch, it clots and forms a pelvic haematocoele. On bimanual examination a boggy, tender, indefinite swelling is noticed, which, after some days, becomes fixed to the posterior vaginal wall. There may be a low degree of pyrexia, unless the haematocoele rarely becomes infected, when it is high. Anaemia and tenderness, with an indefinite mass felt abdominally and in the pouch of Douglas, are very suggestive.

**Enlargement of the Uterus.** If the ectopic pregnancy goes to term, then the non-pregnant uterus will enlarge to the size of a three months' pregnancy. In accordance

with the age of the extrauterine gestation, so will the size of the uterus vary. Though the uterus may show in a less degree such signs of pregnancy as softening of the body and of the cervix, yet Hegar's sign and later on internal ballottement are, of course, absent.

#### Clinical Features of Tubal Pregnancy.

The clinical features of tubal pregnancy may be considered under three headings: (i) Those occurring before the occurrence of internal haemorrhage, (ii) those occurring after the occurrence of internal haemorrhage, (iii) those occurring in secondary abdominal pregnancy.

#### Before the Occurrence of Internal Haemorrhage.

When a healthy woman whose periods are usually regular, goes two or three weeks over the expected date of her period, she at any rate will suspect pregnancy. But in one out of three cases of ectopic gestation there is no definite interruption of the period, as irregular vaginal bleeding appears at or before that next period. When recurrent attacks of spasmodic abdominal pain, often referred to the affected side, are noticed in early pregnancy, the presence of an extrauterine gestation must be suspected. In the majority of cases the first sign of disturbance is a little external bleeding from the uterus, which may precede by a few days a more severe haemorrhage into the abdomen. It is this internal bleeding which causes secondary symptoms which are not uniform and give rise to the opinion that the most typical thing about an ectopic pregnancy is that it is so often atypical.

#### After the Occurrence of Internal Haemorrhage.

After the occurrence of internal haemorrhage the bleeding from the uterus is steady, moderate in amount and dark in colour. The decidua may now be shed as a whole cast or in fragments. But the general clinical picture depends upon the amount and the rapidity of the internal haemorrhage, so that three clinical types may be described.

The first is the diffuse type, where "intraperitoneal flooding" with blood occurs. Sudden severe abdominal pain with vomiting, faintness or even syncope, is accompanied by pallor, rapid and feeble pulse, restlessness and air hunger, coldness of the skin and sweating and subnormal temperature. Shoulder pains may be severe. There are general abdominal tenderness and distension; Cullen's sign, in which the umbilicus is discoloured to bluish-black, is usually overlooked in the hurry to paint the abdomen with iodine, preparatory to an immediate abdominal section. Vaginally and rectally a soft, doughy swelling is felt, which is not a cyst, because its outline is impalpable; it is not inflammatory fluid, for there is complete absence of tension; it can only be blood. Fortunately this grave diffuse type occurs only in about 10% of patients. But all ectopic gestations are potentially dangerous and unless the bimanual examination is carried out with proper discretion and gentleness, the gravid tube may be ruptured and a rapid and even fatal internal haemorrhage occur. Particularly does this apply to examination under an anaesthetic, when the patient cannot resist a too vigorous investigation; in the writer's opinion this should never be done, unless an immediate abdominal operation can be carried out if necessary.

The second clinical type is found when the internal haemorrhage is less severe and more gradual. A variable amount of blood collects around the gravid tube and accumulates in the pouch of Douglas. This is the stage at which most cases of tubal pregnancy come to operation, usually in the second month, and show a condition of tubal abortion, erosion or rupture. Here the classical symptoms of amenorrhoea, uterine bleeding and recurrent attacks of pain are noticed; moreover, the physical signs revealed by vaginal examination are those of a diffuse, tender and more or less fixed swelling, occupying one or other lateral half of the pelvic cavity. But the classical symptoms are often modified, so that a diagnosis from salpingitis may be difficult. In that case the patient may be safely observed in bed for a few days and the diagnosis of a "leaking" tubal pregnancy confirmed.

The third clinical type is the encysted type of internal haemorrhage. In this type the internal haemorrhage is gradual; the blood which comes slowly from the gravid tube partly clots about it, but mainly collects in the pouch of Douglas, where it becomes rapidly encysted by adhesive peritonitis and thus forms a pelvic haematocele which may cause dysuria and rectal tenesmus. On bimanual examination a fixed, tender, elastic swelling may be felt in the lower part of the abdomen and which is continuous with a doughy, tender mass filling the pelvis and displacing the uterus forwards under the *symphysis pubis*.

#### Secondary Abdominal Pregnancy.

Occasionally after tubal erosion or rupture and rarely after tubal abortion, the ovum may survive and go on developing for three or four months, when a further abdominal haemorrhage terminates the pregnancy. A full-time ectopic pregnancy is very rare indeed. Usually there is a history of abdominal pain in the early months with vaginal bleeding. In advanced ectopic pregnancy an abdominal examination will demonstrate the fetus with undue ease and also the absence of uterine contractions. On careful bimanual examination the characteristic bulging of the lower uterine segment will not be felt; in addition, the body of the uterus, enlarged to the size of a three months' pregnancy, will be found below and to one side of the tumour containing the fetus. Occasionally one can feel very easily the fetal parts apparently just beneath the extremely thin abdominal wall of a *multipara*; can it really be an ectopic gestation near to term? But a uterine contraction will soon be felt and the vaginal examination establishes the diagnosis of a normal pregnancy. At term an attack of pain, a so-called "false labour," is followed by the death of the fetus. In the absence of infection the fetus may become mummified or converted into a lithopædion by deposition of lime salts; this may not be discovered until late in life or even *post mortem*.

The rare ovarian pregnancy so closely simulates a tubal gestation that a diagnosis is not made until after operation, when the specimen has been submitted to a complete microscopical investigation.

Another rare instance of ectopic pregnancy may occur in an undeveloped uterine horn. Rupture may follow at any time, but generally later than in tubal gestation; sometimes it may proceed to term. A careful examination will show that the slightly enlarged uterus is pushed to one side by a large globular elastic swelling formed by this ectopic pregnancy.

Bilateral tubal pregnancy does occur occasionally and is usually diagnosed only at operation, and even then it may be missed. Therefore, when an operation is performed for extrauterine gestation, it is essential to examine the appendages on both sides.

*Repeated Tubal Pregnancy.* Repeated tubal pregnancy is not an uncommon experience and justifies the removal of the non-gravid tube too, provided that the woman has had children. The writer remembers a doctor's wife whose first gestation was a ruptured tubal pregnancy; subsequently this was followed in due course by three normal gestations. Such a patient should be closely observed during the early weeks of any subsequent pregnancy in order to avoid any undue risk.

*Combined Intrauterine and Extrauterine Pregnancy.* Fortunately a combined intrauterine and extrauterine pregnancy rarely occurs; the tubal gestation comes to operation and then for the first time an intrauterine pregnancy is discovered.

#### Differential Diagnosis.

##### Intrauterine Pregnancy.

Sometimes in early pregnancy part of the uterus feels soft and part hard, owing to irregular uterine contraction. If the patient complains of pelvic pain the diagnosis of extrauterine pregnancy may be made. The fact that there is no uterine bleeding should help towards the correct diagnosis. Sometimes a faecal mass may be mistaken for a pregnant tube, which brings one to the common but important daily point that no diagnosis should be made until the bladder be emptied and the bowels suitably cleared.

A myoma in the uterine wall in early pregnancy may easily cause confusion. The writer can recall a patient in whom he felt apparently a small firm uterus with a large soft mass alongside it; there were attacks of colicky pain with a slight blood discharge. At operation it was found that the condition was an early uterine pregnancy with a myoma causing a threatened abortion. After myomectomy the symptoms subsided and the patient was duly confined at term.

#### *Uterine Abortion.*

It is never safe to assume that bleeding during early pregnancy is always due to a threatened abortion until it is confirmed by bimanual examination. Usually slight pain with free bleeding is due to threatened or inevitable abortion, whilst severe pain with only slight blood discharge may be due to extrauterine pregnancy. The careful doctor, too, may not desire to examine the patient, lest he convert a threatened into an inevitable abortion. But in this instance, by gentle manipulation and mainly avoiding the uterus, that risk is negligible. Moreover, with the os *uteri* dilating and no tender tumour to be felt on one side of or behind the uterus, the diagnosis of uterine abortion is definite.

#### *Incomplete Uterine Abortion with Retroversion.*

A leaking tubal gestation with a small retrouterine haematocele may easily be mistaken for an incomplete uterine abortion. A careful bimanual examination should disclose the diagnosis, unless the patient be fat or resistant. A curettage upon a mistaken diagnosis may be followed by disaster. It is not uncommon to find such patients admitted into hospital with a previous history of curettage. Pain is seldom present in incomplete abortion, but is always associated with a leaking tubal gestation. Again, in uterine abortion the os is dilated and the retroverted uterus can easily be lifted up, when no tumour can now be felt in either fornix. But a tender mass on one side might have to be diagnosed from a septic infection following on abortion.

#### *Retroversion of the Pregnant Uterus.*

The diagnosis of retroversion of the pregnant uterus from a pelvic haematocele is important, because disaster may follow upon the wrong treatment. A retroverted uterus which fills the pelvis ought to be twelve to fourteen weeks pregnant, but the period of amenorrhoea may be only three or four weeks. Recurrent attacks of pain associated with a slight dark blood discharge are features in ectopic gestation. If the retrogravid uterus is threatening to abort, there will be pain, but the blood discharge will be bright and probably profuse. On examination, the posterior vaginal wall appears to be glued to the haematocele and the uterus can be felt in front. On the other hand, the posterior vaginal wall slips easily over the retrogravid uterus and the swelling felt is continuous with the cervix.

#### *Angular Uterine Pregnancy.*

Sometimes the ovum lodges and develops high up in the uterine cavity and in the early months gives a peculiar shape to the pregnant uterus, which is partly firm and mainly soft; this is most suggestive of an interstitial ectopic gestation; as both have amenorrhoea and pain, the diagnosis may not be corrected until possibly uterine abortion occurs or an abdominal section is made.

However, interstitial pregnancy in which the ovum becomes embedded in that portion of the tube traversing the uterine cornu, is rare. The writer has seen one case in which the uterine cornu had to be excised, and another in which a subtotal hysterectomy was necessary in order to remove the ectopic mass completely.

#### *Early Pregnancy with a Small Ovarian Cyst.*

The general enlargement and softness of the uterus and the firmness and mobility of the cyst will readily differentiate it from tubal pregnancy in which the tumour is indefinite, tender and more or less fixed. But if this cyst

or a pedunculated myoma be twisted, there is severe pain and a threatened abortion may follow with a blood discharge. Here the differential diagnosis is difficult, but not important, because in both instances an abdominal section is indicated.

#### *Salpingitis with Irregular Bleeding.*

It is a common difficulty to distinguish between salpingitis with irregular bleeding and a leaking ectopic gestation, as both cause pain and irregular vaginal bleeding, with a tender fixed swelling at one side of the pelvis. A history of amenorrhoea will suggest tubal pregnancy and previous attacks may point to salpingitis. Usually the blood discharge is more profuse in salpingitis, and a high temperature, particularly if a bilateral tender mass be felt, indicates inflammatory disease. In the more chronic types fixation of the uterus and the infiltration of the broad ligament are noticed in salpingitis. It may be necessary to open into the posterior fornix, when dark blood and clots will escape to establish the presence of an extrauterine gestation.

#### *Appendicitis.*

On account of its frequent occurrence, appendicitis is sometimes confused with extrauterine pregnancy, but a careful history and examination should point out the correct diagnosis. A previous attack, the tendency of the inflammatory process to extend out more into the iliac fossa, and the relatively higher point of tenderness, the occurrence of fever from the onset and an absence of uterine bleeding are characteristic of appendicitis. The leucocyte count<sup>10</sup> may help in ruling out such inflammatory conditions as salpingitis and appendicitis. Uninfected ectopic pregnancy does not commonly increase the leucocyte count, unless there be a recent internal hemorrhage, when it rises and rapidly falls again in a few hours.

#### *Pyelitis.*

Pyelitis is a frequent complication of pregnancy and causes attacks of pain. But the suspected presence of a tubal pregnancy causing pain without uterine blood discharge is so rare that it is wise to examine the urine and change the diagnosis.

#### *Pelvic Haematocele.*

Pelvic haematocele, of course, most commonly occurs in ectopic pregnancy. It may also follow rupture of a large vein of a uterine myoma, sometimes with severe internal hemorrhage. The writer has also seen three patients at operation in whom 280 cubic centimetres (ten ounces) or more of blood had escaped from a ruptured Graafian follicle and formed a pelvic haematocele.

#### *Acute Abdominal Conditions.*

A twisting ovarian tumour has been considered already. Rupture of tubal pregnancy with severe intraperitoneal bleeding may sometimes be confused with the perforation of a gastric or duodenal ulcer or of an appendix; but the one outstanding point is that none of these conditions causes a sudden concealed hemorrhage; similarly with renal or biliary colic and acute intestinal obstruction. If, however, any of these conditions are associated with uterine abortion, the differential diagnosis becomes more difficult.

#### *Bibliography.*

The following excellent text books were consulted and acknowledgement thereof is gratefully recorded.

Eden and Lockyer: "Gynaecology," Third Edition, 1928, page 168.

Howard A. Kelly: "Gynecology," 1928, page 673.

John S. Fairbairn: "Midwifery and Diseases of Women," 1921, page 193.

J. M. Munro Kerr: "Clinical and Operative Gynaecology," 1922, page 422.

Comyns Berkeley: "Diseases of Women," Fourth Edition, 1930, page 426.

**Reference.**

<sup>o</sup>Lilian K. P. Farrar: *Surgery, Gynecology and Obstetrics*, November, 1925.

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**British Medical Association News.****SCIENTIFIC.**

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION, IN CONJUNCTION WITH THE SECTION OF NEUROLOGY AND PSYCHIATRY, was held at the Robert H. Todd Assembly Hall, British Medical Association House, Macquarie Street, Sydney, on April 30, 1931, Dr. GEORGE BELL, the President, in the chair.

**Modern Developments in the Teaching and Treatment of Mental and Nervous Disorders.**

DR. R. A. NOBLE read a paper entitled: "The Place of Psychiatry in the Practice of Medicine."

PROFESSOR W. S. DAWSON read a paper entitled: "The Place of Psychiatry in the Medical Curriculum" (see page 91).

PROFESSOR C. G. LAMBIE expressed his appreciation of the two papers. He said that the broad outlook of the two speakers upon psychiatry provided a basis upon which to discuss the place which the subject should occupy in the curriculum. Psychiatry, for long the Cinderella of the profession, now occupied an honoured position in medical science and in the curriculum. Thanks to the enterprise of men like Professor Dawson and of his predecessor, Sir John MacPherson, the subject now received in the Medical School of the University of Sydney the recognition it merited.

Recently a new curriculum had been framed in which an attempt had been made to introduce the various subjects of medical science in a rational sequence and correlated with one another in such a manner as to give a due sense of their unity and mutual interrelationships. The first three years of the curriculum were devoted to the study of the fundamental sciences and of the structure and functions of the normal individual. In the second three years disease in all its aspects was considered, and this part of the course was divided into three stages according to the method of approach to the study of disease.

In the fourth year disease was approached mainly from the point of view of disordered physiology and morphology, how altered structure and function manifested themselves in symptoms and signs, and how both function and structure might be modified by remedial measures. In the fifth year specific diseases, their aetiology, characters, course, special treatment and prevention formed the main objects of study, while the sixth year was devoted to differential diagnosis, prognosis and a synthesis of all previous points of view.

It was necessary to consider how psychological medicine would fit into such a scheme. As to whether psychology should be regarded as a branch of physiology might depend upon one's metaphysical conceptions, but it seemed natural that the functions of the mind should be studied along with the other functions of the living organism and therefore the proper place for lectures upon normal psychology was at the end of the third year after the nervous system had been dealt with in physiology. He heartily endorsed Professor Dawson's method of presenting this part of the subject. By dealing with psychology largely along behaviourist lines the breach between psychology and physiology became less manifest and psychology took its place among the biological sciences.

Just as normal psychology should come at the end of normal physiology, so abnormal psychology might very well be taken up at the end of the study of abnormal

function. Dr. Noble had demonstrated the importance of psychiatry, or rather of the attitude of the psychiatrist, in every branch of medicine. This was because the psychiatrist was chiefly engaged in the study of the reaction of the personality of the patient to the total situation. Hippocrates and Aristotle had, indeed, envisaged the living organism, whether healthy or diseased, as a purposive whole, but the materialistic philosophy of last century and the morphological conceptions which until recently dominated pathology, had tended to cause these biological principles to be overlaid. Fortunately, the philosophy of the organism as an organized and integrated whole was again coming into its own. When the pathology of function was taken up in the fourth year, this point of view was introduced from the very beginning. The student was first taught to envisage the patient as a whole, and then the various ways in which the integration of function might become disordered were studied. Beginning with the simpler integrations and passing to the more complex, psychiatry naturally came in as the study of the pathology of the highest integration of all—that of the personality. By the end of the fourth year all the various functions of the body, except those of reproduction and the higher psychical activities, would have been dealt with, so that the study of the remaining functions would encroach upon the fifth year, which was otherwise devoted to the study of specific diseases. Gynaecology and obstetrics were taken up in the long vacation term between the fourth and the fifth year and in the Lent term of the fifth year respectively, whilst psychiatry had been placed in the Trinity term of the fifth year. The postponement of psychiatry until this term had the further advantage that it made provision for certain specific diseases of importance in psychiatry, notably syphilis, to be dealt with at an earlier period.

In the fourth year, under the new curriculum, there were no classes in psychiatry; but in the fifth year the students, besides receiving instruction by means of systematic lectures and demonstrations at the mental hospital, had to attend in groups at the psychiatric outpatient's clinic of the Royal Prince Alfred Hospital, where they received a most important training in the recognition and treatment of early cases of mental disorder. He also looked forward to the time when it might be possible to arrange for groups of students to spend a short period of internship in a mental hospital during their fifth year. The experience thus gained would be valuable if only for the sake of learning how to administer hypnotics with confidence and efficiency.

With regard to the interrelationships between psychiatry and other branches of medicine, two points were to be considered. Psychiatry had been placed in the same term as preventive medicine and before the course on medical jurisprudence and ethics, which came in the Michaelmas term of the fifth year. The psychiatrist would thus prepare the ground for the study of mental hygiene, which might be considered as the end of the course of preventive medicine, and for the discussion of the many important medico-legal and ethical problems which arose in connexion with mental disorders.

Professor Dawson had mentioned that he would like to see a ward in which patients suffering from diseases of various organs, complicated by mental disorder, would be treated. This rightly implied that the psychiatrist treated the patient from the mental point of view, whatever might be the seat of organic disease. Organic disease of the nervous system was not, therefore, to be regarded as coming within the special province of the psychiatrist, but was on a footing with disease of other parts of the body. For obvious reasons the psychiatrist had to be a competent neurologist, and it was desirable that there should be the closest cooperation between the neurologist and the psychiatrist; but it was certainly not expedient that neurology should be absorbed by psychiatry.

PROFESSOR HARVEY SUTTON, in speaking from the public health point of view, said that he had always thought that public health was the Cinderella of the medical curriculum. It had arisen from its erstwhile odiferous surroundings and was being concentrated on the human factor. The human being was not a body without a

mind, but was an organism in which body and mind were interdependent. Professor Sutton referred to the study of feeble-mindedness and pointed out that it was an important part of public health. He also made reference to birth injury and to the number of feeble-minded children resulting therefrom. Rickets occurring in a child under five was a cause of retardation in school life, and postural deviations also had to be considered. There were many other aspects which should be emphasized in teaching the positive idea of health. He referred particularly to stammering and to the effect which it had on the lives of individuals. Again, delinquency should occupy an important place in medical work on account of the associated mental maladjustments and the social difficulty. Many of these aspects were interdependent. As far as the control of such diseases as tuberculosis and syphilis was concerned, if they were regarded purely from the pathological, symptomatic and hospital points of view, they would not make much progress. The psychological factor was undoubtedly the biggest, and of considerable importance was the psychological outlook of the medical practitioner in regard to notification. Further, it was a fact that 50% of accidents were the result of the human factor. Accidents could be minimized, not so much by mechanical safeguards, although these, of course, were of the utmost importance, but by education, and this was a mental function.

Industrial fatigue was the basis of all studies of health in relation to industry. In industrial hygiene the doctor virtually confessed the people—he exercised a psychiatric function. They found when they came to neurasthenia, which was the specific disease of civilization, that it was the greatest cause of long sick leave amongst school teachers. It was certainly a public health problem, and could be solved only by attention to the mental factors. In no disease was the failure of the general practitioner so noticeable as far as treatment was concerned as in neurasthenia. The neurasthenic patient suffered from a condition which was completely disabling—he was just as helpless as if his legs were cut off. It was necessary here, of course, to apply the principles of psychiatry. Professor Sutton also referred to the importance of studying the condition of women between the ages of forty and forty-five when they were affected by changes in the endocrine glands. He went on to say that psychologists criticized medical practitioners for their neglect of the study of psychology and of its practice as far as mental testing and so forth were concerned. He thought that the neglect of the medical practitioners in this sphere had given rise to a great deal of quackery. There was no doubt that medical practitioners had failed on their job, otherwise they would not have lost their hold in this way on the public.

As far as medical students were concerned, he thought that there was a failure in hospital training. Students graduated with the wrong idea of their functions in practice. They set the surgeons up as gods and almost worshipped them. This was true, though not quite to such a marked degree, of their attitude to specialists. The truth was that both surgeons and specialists should be regarded as rarities. They were as rare as expert pianists or violinists among a body of people who might sing tolerably well. The out-patient departments were neglected by resident medical officers and but little was heard of the social worker. Resident medical officers got no insight at all into the home conditions or working conditions of the patients in the outdoor departments. In his opinion every resident medical officer should conclude his period of residence by a term of service in the outdoor department. Further, they would not obtain the best results until every graduate was appointed as a hospital resident. It was really absurd that hospital positions were always allotted to the top men who needed them least. In such countries as Czecho-Slovakia they were wiser and insisted on one year's appointment as a resident medical officer. In conclusion, Professor Sutton pointed out that the student himself should receive more attention. The medical school authorities supervised his training, but did nothing for him as an individual. The health examination of medical students might point a way in the right direction. Soundness of mind was the master key to human progress.

DR. A. J. GIBSON said that he was interested particularly in Dr. Noble's paper. He said that if they wished to have healthy individuals in the community the obstetricians would have to see that babies were born without birth injury. It was not always the fault of the obstetrician when unhealthy babies were born, for they often had to deal with damaged goods. There was one important aspect which was not adequately regarded, and this was the question of diet. He had recently been reading the researches of Mellanby, who found that vitamin deficiency during pregnancy had a pronounced influence on babies' health. He had found that if the mothers were supplied with adequate vitamin D the children would develop healthy teeth and bones, and rickets would be prevented. He had also shown that vitamin A prevented infections, and had stated that it produced in infants a healthy epithelial structure. There was a craze among women for diet and slim figures. They ate rubbish and expected to have healthy infants. He felt sure that much more work must be done in regard to diets.

DR. A. W. CAMPBELL said that the papers read and the remarks of the several speakers must be endorsed. As he listened he felt that the main difference between the teachings even of twenty-five years ago and of today was that the need was felt for the education of the medical practitioner in psychiatry and that the teaching of psychiatry and the material for psychiatry were not at the present time confined within the walls of a mental hospital. He quite approved of Professor Dawson's method of leading up to and exposing his subject. He recognized the importance of the basic sciences which must precede clinical teaching. This was a big load on Professor Dawson's shoulders, but every teacher in every department should be to some extent a psychiatrist and should point out matters to which Dr. Noble had referred. Reference had been made to the alliance between neurology and psychiatry, and in this connexion he referred to two books, Oppenheim on nervous diseases and Kraepelin on psychiatry. At the end of each conditions were dealt with which really pertained to psychiatry. With these the neurologist had been doing more work than the psychiatrist, but psychiatry was now coming into its own.

DR. GEORGE BELL regretted that there were not more general practitioners present. He referred to the training of resident medical officers in the use of hypnotics. Their knowledge was, to say the least of it, crude. His experience of psychiatrists was that they were very useful persons when it came to the treatment of patients with fracture of the femur who had indulged too freely in alcohol. They knew exactly what dose of a hypnotic to give to a patient with *delirium tremens*, and knew how to put him to sleep for two or three days so that subsequent treatment was made much easier.

In conclusion, Dr. Bell conveyed the thanks of the meeting to Dr. Noble and Professor Dawson.

Professor Dawson in his reply said that the favourable acceptance of Dr. Noble's and his papers by the meeting and the discussions which followed were evidence that any reasonable requests by psychiatrists for a closer association between their own specialty and the rest of medicine would receive recognition. Thanks to the foresight of the late Dr. Eric Sinclair and his successor, Dr. C. A. Hogg, and to Sir John MacPherson, psychiatry in the medical curriculum of the University of Sydney received more attention than in most other medical schools in the British Empire. What was being done in pregraduate teaching in Sydney was ahead of what was done in the London schools.

#### NOMINATIONS AND ELECTIONS.

THE undermentioned have been nominated for election as members of the New South Wales Branch of the British Medical Association:

Dittmer, Felix Cyril Sigismund, M.B., B.S., 1930 (Univ. Sydney), Sydney Hospital, Sydney.

Kenny, Rawdon Hamilton, M.B., B.S., 1928 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown. Smithers, Ernest Eric, L.R.C.P. (Edinburgh), L.R.C.S. (Edinburgh), L.R.F.P.S. (Glasgow), 1931, 3, Myreepi Flats, Ramsgate Avenue, Bondi.

## Obituary.

### FREDERICK STEELE SCOTT.

We are indebted to Dr. H. H. E. Russell for the accompanying appreciation of the late Dr. Frederick Steele Scott.

Through the passing of Frederick Steele Scott the medical profession has lost a very prominent figure, and many of us a very dear friend.

Steele Scott was not an Australian by birth. He was born in County Tyrone, Ireland, and was educated at the Royal University of Ireland, securing his medical degree at that institution. He spent a period in England, but the lure of overseas dominions soon after brought him to South Australia.

In the year 1900 he started practice in Unley in partnership with his brother-in-law, the late Dr. A. H. Gault. In 1906 he married Miss Florence Love.

Steele Scott early showed a liking for surgery and did much valuable work in this sphere, especially during the war period. From 1913 to 1916 he was assistant surgeon to the late Dr. Ben Poulton at the Adelaide Hospital, and during the war (1916 to 1917) was given the rank of major and was in charge of a sea transport section of the Australian Army Medical Corps. His section travelled on several troopships, and as Senior Medical Officer he gave most effective service.

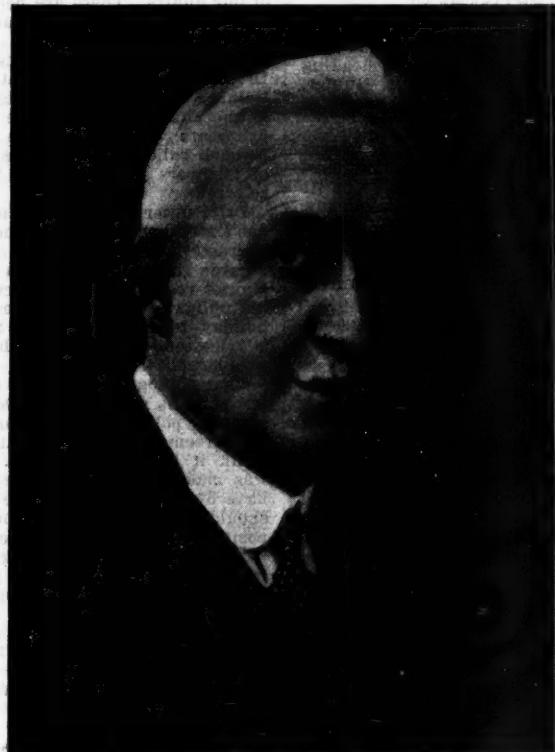
Steele Scott took a keen interest in everything connected with the British Medical Association. After many years as a valued member of the Council, he, in the year 1924-1925, became President of the South Australian Branch. In 1925 he relinquished general practice and took his family to England, chiefly to establish his elder son, John Steele Scott, at Cambridge and to further his own studies in skin diseases. On his return he practised dermatology on North Terrace and was appointed honorary dermatologist to the Parkside Mental Hospital.

He took a great interest in the nursing profession and was for a great number of years a member of the Nurses' Registration Board. He was a member of the Committee of the Royal British Nurses' Association (Australian Branch) and acted as its chairman for five years, remaining on the committee until his death. Another organization which claimed his interest, was the District Trained Nurses' Society, as he fully realized the value of that institution to the poorer classes of the community. While a resident of Unley, Steele Scott was associated with the local Board of Health as Deputy Officer of Health, holding this position for twenty years. He was an ideal profes-

sional neighbour, approachable, capable and loyal to a degree, always eager to assist a fellow practitioner, especially a younger man entering the district. His strict code of honour, and as a corollary, his high ideals of medical etiquette, made him most dependable.

Steele Scott owed much to his keen sense of humour and cheery disposition. He read widely, and was a good conversationalist. He was quick at repartee and could always entertain with anecdote which was greatly enhanced by a decided brogue, of which he was fully conscious and, I think, delighted in. This levity showed but one side of his character. Another revealed an understanding and very sympathetic nature which endeared him to all. His patients regarded him as a friend as well as a medical adviser, and he won and deserved the confidence of a wide circle of acquaintances. In his earlier life he was a good horseman, and his admiration for a thoroughbred was maintained to the end. It was no doubt due to his love of horses and an inbred desire for a minor gamble that the deceased gentleman was a frequenter of the turf. He was actively connected with two or three racing clubs as surgeon. In his early life he took an interest in tennis and cricket and was a regular spectator at the Adelaide Oval at all important cricket matches. He understood all the fine points of the game and greatly enjoyed an exchange of reminiscences with other enthusiasts of the great national game. His beautiful garden gave him ample opportunity to indulge his hobby in floriculture, and it was a dull morning indeed if Steele Scott was not up and doing amongst his flowers at 6 a.m. In his remaining leisure hours he was a great reader of verse.

At the time of his death Dr. Scott was resident at Gilberton. He leaves a widow, two sons and one daughter; he passed away in his sleep—the way he would have wished to die. The death of so kindly natured a gentleman, cultured in the finest sense, proficient to the highest degree, at so comparatively early an age is a matter for our sincere regret. We deplore his passing and extend our sincere sympathy to those who have been bereaved.



## Post-Graduate Work.

### PRACTICAL DEMONSTRATIONS IN MELBOURNE.

WITH the approval of the Melbourne Permanent Committee for Post-Graduate Work it has been decided to invite members of the Victorian Branch of the British Medical Association to the following practical demonstrations, which have been arranged by the honorary staff of Saint Vincent's Hospital, Melbourne.

These demonstrations will take place in the out-patient department at 4.30 p.m. as follows:

Monday, July 20, Friday, July 24, Monday, July 27, 1931:  
Practical demonstrations in methods of examination

of the ear, larynx, nose and throat, and the diagnosis of common diseases of these organs.

**Friday, July 31, Monday, August 3, 1931:** Diagnosis and treatment of common joint conditions.

**Friday, August 7, Monday, August 10, Friday, August 14, 1931:** Diagnosis and treatment of common skin conditions.

Further demonstrations will be arranged later, including the technique of refraction. As the numbers in this latter course must be limited, it is desired that members intimate in advance if they care to attend.

Further details may be obtained from Dr. J. G. Hayden, 55, Collins Street, or from the Medical Superintendent.

## Correspondence.

### PROFESSIONAL ADVERTISEMENT.

SIR: Certain statements in the letter of Dr. Hugh Hunter appearing in the journal of July 4 under the heading "Professional Advertisement" call for notice. Dr. Hunter, dealing with the question of the way in which by-laws of the New South Wales Branch are dealt with, states:

The fact that less than fifty members were present at the general meeting, and most of them not general practitioners, is not the fault of the Association or its system, but that of the members themselves, who show an utter disregard for the welfare of their fellow practitioners and their own selves. It appears that the only capability of a number of these absentees is to offer criticism, and criticism which is rarely constructive.

Apparently these statements must have been made without any thought or consideration whatever. Otherwise it would surely occur to Dr. Hunter that at a very modest computation at least half of the members of the New South Wales Branch would have found it utterly impossible to be present at the meeting in question. To say that this is not the fault of the Association or its system surely is not correct. The present system of reaching binding decisions is totally inadequate.

I agree with Dr. Hunter in his advocacy of every medical man joining his local association and, like him, I have done some slight service to my own local association in this respect. But when one comes to sum up the standing of the local associations, one meets with disappointment. The limit of effectiveness of the local associations is reached in forwarding instructions to their delegates as to how they should vote at the annual meeting of delegates with the Council. The decisions of this meeting may be summed up as pious hopes. They have no binding force whatever on the Council or on anybody else.

It seems to me it is past time that the local associations should be allotted some definite standing in the Branch. Making them divisions of the Association, with the right to appoint representatives to an annual representative meeting whose decisions would be binding on all members, would meet the case. This would prevent fifty members passing a by-law repugnant to the great majority of their fellows and the remainder of the sixteen hundred members of the Branch having no say in the matter.

When I last had the pleasure of meeting Dr. Hunter personally he was what is regarded as somewhat of a rebel. I am sorry to notice that apparently his rebellious spirit has been subdued and he might now be thought to be enamoured of things as they are. I have reached this conclusion as a result of observing his reference in two separate places in his letter to "the enormous amount of work done by the Council." I fear that Dr. Hunter's inside knowledge of the enormous amount of work done by the Council has rendered him unfit to observe the wood on account of the trees. He says: "I fear that if either of these gentlemen knew the enormous amount of work done by the Council they would be agreeably surprised." Perhaps they would. On the other hand, they may possibly be disagreeably surprised, as I have been. At all

events, that is not argument, and in my experience has for far too long passed as such. Anyone can do an enormous amount of work if they keep at it and take long enough. The important question is whether the enormous amount of work is the right work and whether it produces satisfactory results. In my own opinion, in very many cases it does not.

Yours, etc.,

J. R. RYAN.

Lismore, New South Wales,  
July 7, 1931.

SIR: May I thank Dr. Lawes for the courtesy of his reply and his assurance that the Council had nothing to do with the rather valuable piece of publicity they received in *The Sydney Morning Herald*?

Dr. Hunter's letter is a little different. He seems quite annoyed that I should suggest that all of our members should have an equal chance of voting on the management of our affairs. There are personal innuendoes in his letter which I think are a little unworthy. I do not propose to reply to them.

But I would ask you space to reply to other remarks of Dr. Hunter. He says that the ballot box is a proven failure. Would he kindly tell us: (i) How often (except at the annual elections) we have had a ballot in the last five years, (ii) whether the percentage of votes registered by such ballots (if any) was ever less than the percentage of members present at the "general meeting" to which I referred.

Dr. Hunter makes scathing remarks about people who don't attend these Sydney meetings. That, I think, is very characteristic of the city attitude, in that it entirely regards the position from a city point of view. Does Dr. Hunter really think that a country practitioner is shirking his obligations if he refuses to take three or four days' holiday to come down to Sydney to discuss such soul-stirring questions as whether a doctor should have his photograph in the press?

That photograph question is very silly. I notice that our Secretary is reported to have told the press that it doesn't apply to politicians and sportsmen. Whilst being heartily in agreement with his interpretation of the by-law, I think it is a fair question to ask on what authority it was made. To say the least of it, it is surely unwise to have by-laws that cannot be enforced as they stand. Why should the Secretary and Council be put into the invidious position of having to ignore them?

It may be of interest to know that I have had as many letters, telephone rings and messages supporting my claim for "equal voting powers for all," as there were people at the original meeting under discussion. I think it would be a valuable token of good fellowship if whatever reforms are needed emanated from Sydney without pressure from the country.

Yours, etc.,

KEITH L. BARRY.

Grose Street,  
Leura, New South Wales.  
July 15, 1931.

### FOREIGN BODIES IN THE BRONCHI.

SIR: Dr. Mervyn Elliott's contribution to the journal of today's date deserves more than cursory notice from its readers. He instances from his practice at Cobar three cases of a foreign body in a bronchus of a child. He is to be complimented on his insistence on bronchoscopy, even in the absence of definite radiographic findings, and even also where the symptoms had lasted some years.

For some years I have been pleading for the more general use of endoscopy, not only to remove a foreign body known to be present, but to clear up the diagnosis of doubtful symptoms and even to apply therapeutic measures.

The instruments used, particularly the Kahler-Haslinger proximally lighted instruments, are free from risk in use by skilled hands, the procedure is of short duration, and unless the foreign body has itself produced changes of

serious import, no trauma will be caused. Every manoeuvre is carried out under direct vision, which is surprisingly clear. In a little over two years, using these instruments exclusively, I have removed eleven foreign bodies from the bronchi of children under twelve years of age (two were only ten months) at the first attempt. There was no mortality and tracheotomy was not necessary in any instance. Similarly, a foreign body was removed from the oesophagus in six cases amongst children at the first attempt and without mishap.

This series of cases is, of course, quite small, but it definitely shows that the procedure is both safe and successful. It is still safer when used merely as a diagnostic instrument, and eminently lends itself to the "look and see principle," than which in doubtful cases I know nothing better. It also has a vast therapeutic field in providing the means of access for direct intrapulmonary medication. This method is by no means new; wherever it has been consistently applied the results seem to more than justify its use, but even physicians who readily seek the aid of endoscopy for diagnosis, seem shy at the idea of using it therapeutically. One is used to the idea of nose, throat and even tracheal topical application. The extension of the same treatment to the bronchi does not represent anything new in principle, and in such complaints as bronchiectasis results more than justify its trial compared with the results secured by more oblique measures. Nowadays we should be hearing more of the bronchoscope and less of the change of climate (still quite popular) for these unfortunate beings.

Yours, etc.,

ARTHUR MURPHY, F.R.A.C.S.,  
Honorary Surgeon, Ear, Nose and  
Throat Department, Mater Misericordiae Hospital and Children's  
Hospital, Brisbane.

Brisbane,  
July 11, 1931.

#### HOSPITAL PRACTICE.

SIR: I see by this morning's paper that, at the opening of the home for the aged at Abernethy the Minister for Health (Mr. W. T. Ely) is reported to have stated that the system of payments of weekly contributions now operative in industrial areas, where sixpence a week is paid to the hospitals, should be encouraged and extended.

In view of this statement it might be well for medical men to be acquainted with the ways such schemes may affect them.

Some years ago such a scheme was propounded in connexion with the Newcastle General Hospital, and the Medical Board, to its subsequent deep regret, advised in favour of its acceptance, and a threepence a week and later a sixpence a week scheme has been operative here ever since.

The disadvantage of any such scheme as far as the medical profession goes, is that the subscriber becomes entitled to any form of in-patient medical treatment, whether he can afford it privately or not, for as the subscriber is entitled to any in-patient treatment, no discrimination can be used between the child who would otherwise have had its tonsils removed by its own general practitioner for a sum of two or three guineas, and the patient who needs a complicated facial plastic operation in several stages involving a long stay in hospital, which might privately cost the patient a total of perhaps fifty times as much.

That such a state of affairs actually exists is shown from the fact that patients often tell me that my proposed operation fees are within their means and that they would be glad to pay them, only that, having paid weekly industrial contributions to the local public hospital, they insist on being done there. And one has no redress and has to perform the operation there free of charge.

Even were a limit to be put on the salaries of those who may use the scheme, no level could be found which would be equitable to the honorary staff in connexion with

the smaller services and at the same time be fair to the patient in connexion with the major services.

The practical outcome of the scheme, as seen here, is that a form of hospital-abuse complex has been gendered in the minds of many where its presence has no excuse, and the general practitioner (who is probably most hurt by the drift to the hospital of minor work for which the patients could afford to pay him) finds it exceedingly difficult to get even circumcisions or tonsillectomies to do in private.

As this scheme is the biggest disability under which the medical profession exists in this neighbourhood, and as it can be made to look so attractive that even they become party to its introduction, I trust my words of warning may open the eyes of others to the state of affairs.

Yours, etc.,

A. B. K. WATKINS,  
M.S. (Lond.), F.R.C.S. (Eng.).

Commercial Bank Chambers,  
Bolton Street,  
Newcastle,  
July 14, 1931.

#### THE PRACTICE OF PHYSICAL THERAPY.

SIR: May I express my agreement with the general trend of your leading article of July 11 under the above heading. There is no doubt that physical therapy has suffered much discredit from an exploitation by various interests outside the profession and perhaps occasionally in it. Commercial interests, naturally enough, have had much to do with fostering the idea of a machine therapy, though it must be confessed that, in the provision of better instruments, they have rendered great service. But the plain truth is that physical therapy depends on the simple elements, light, in which one includes all radiation, heat, water, massage, manipulation and exercises. The machines are incidental and merely elaborate instruments to produce the forces we use. They should be forgotten by the operator in the same way that the stethoscope is forgotten in auscultating a chest. Our attention will then be concentrated on the patient and the therapeutic effect and we shall avoid that innate tendency to expect the mysterious and improbable from our intricate "black boxes."

Accepted physics, physiology and pathology should be the basis of all argument and expectation and it goes without saying that complete diagnosis is the foundation of any therapeutics, physical or otherwise.

The clinical aspect is therefore still paramount and our physical methods are just a potent addition to our armamentarium. They are by no means a complete and exclusive system of treatment and still less a cult. The best work I have seen has been done by men who are keen clinicians in their particular specialty and who have devoted time and energy to applying physical methods to their own particular problems in conjunction with the usual modes of treatment.

The rationale of most physical treatment is as well understood as is the action of many universally accepted drugs. There is thus no genuine reason to cast discredit on the whole subject because it has been rendered ridiculous by over-enthusiastic zealots and abused by those who seek to impress rather than to treat. Such things are merely human nature. The actual facts are that certain very definite benefits have been proven to the credit of each mode of treatment, and such facts can be accepted on the available evidence without in the least straining our medical credulity. Other assertions are empirical, as might only be expected in such a field. Still others are probable, plausible or even fantastic, but out of the mass of literature, largely chaff, one can cull quantities of wheat. Certainly there are no grounds for assuming that the possibilities of the subject are exhausted or even adequately broached at this stage. Incidentally, may I state that the best articles on physical therapy are found, not in the avowed physical therapeutic publications, but scattered throughout the general medical literature, where the viewpoint, as a rule, is less likely to be biased by partisan zeal. It is regrettable that some of the journals

of the specialty are inclined to resent that proper caution with which the general body of the profession approaches the new and the unknown. To demand at this stage a chair of physical therapy and the elevation of the subject as one of a triad, medicine, surgery and physical therapy, is premature and savours in my judgement of extravagance.

The needs of the situation are sound education of the profession in the principles as far as they are known, that they may intelligently prescribe and supervise the instruction of technicians that they may treat under orders, the control of the irregular practitioner, and still more research. Such needs might well be met by your tentative suggestion of a diploma and a special section for the study of these physical agents. That it would be open to any member of the Branch I consider a distinct advantage to all concerned, for any assemblage of specialists is the better for the presence of those who in the aggregate take a broader, if less detailed, view of affairs.

We are lamentably behind America and England in physical medicine. A fully equipped physical therapy department is a requirement of every "A" class hospital in the United States, and practically all the main London institutions have large and well furnished departments. The status of the subject may be estimated by the names which appear on the American Council of Physical Therapy and the prominence of the men engaged in the same work on the opposite side of the Atlantic. That it has come to stay and is not a passing phase is beyond doubt, for there is already a record of achievement which invites us to further labours.

In conclusion, may I advocate the formation of a special section of the New South Wales Branch of the British Medical Association where this subject may be discussed and studied. To dispel a common illusion it may be necessary to assert that there is nothing in the legitimate practice of physical therapy to conflict in the slightest degree with our highest medical ideals.

Yours, etc.,

ERIC W. FRECKER,  
M.R.C.P. (Edin.), M.B., Ch.M.

294, Burwood Road,  
Burwood, New South Wales,  
July 15, 1931.

### Diary for the Month.

- JULY 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
 JULY 30.—South Australian Branch, B.M.A.: Branch.  
 JULY 30.—New South Wales Branch, B.M.A.: Branch.  
 AUG. 4.—New South Wales Branch, B.M.A.: Organization and Science Committee.  
 AUG. 5.—Victorian Branch, B.M.A.: Branch.  
 AUG. 6.—South Australian Branch, B.M.A.: Council.  
 AUG. 7.—Queensland Branch, B.M.A.: Branch.  
 AUG. 11.—New South Wales Branch, B.M.A.: Ethics Committee.  
 AUG. 13.—New South Wales Branch, B.M.A.: Clinical Meeting.  
 AUG. 18.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 AUG. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee.

### Medical Appointments.

Dr. G. R. Fetherston (B.M.A.) has been appointed Senior Resident Medical Officer at the Mooreoona General Hospital, Victoria.

### Medical Appointments Vacant, etc.

FOR ANNOUNCEMENTS OF MEDICAL APPOINTMENTS VACANT, ASSISTANTS, *locum tenentes*, SOUGHT, ETC., SEE "ADVERTISER," PAGE XIV.

ROYAL HOSPITAL FOR WOMEN, SYDNEY, NEW SOUTH WALES:  
Resident Medical Officer, Junior Resident Medical Officer.

THE BRISBANE AND SOUTH COAST HOSPITALS BOARD, QUEENSLAND: Honorary Officers.

### Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.I.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company, Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Members desiring to accept appointment in ANY COUNTRY HOSPITAL, are advised to submit a copy of their agreement to the Council before signing, in their own interests. Brisbane Associated Friendly Societies' Medical Institute. Mount Isa Mines. Toowoomba Associated Friendly Societies' Medical Institute.
SOUTH AUSTRALIAN: Secretary, 267, North Terrace, Adelaide.	All Lodge Appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

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